

APPENDIX A SANBORN MAPS

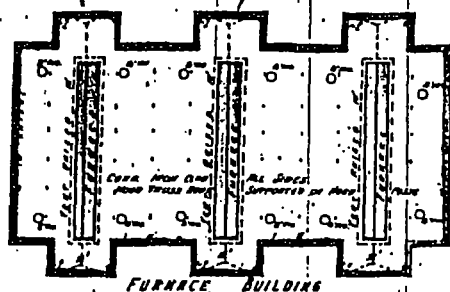
40324701



Superfund

STANDARD ACID CO.

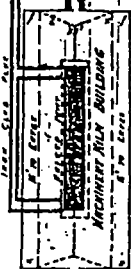
Plant and Survey Purchased, Map, Lines & Area and
all Buildings and Structures as shown by this map
are shown as follows:



FURNACE BUILDING



TANKER BUILDING



MACHINE SHOP BUILDING

CHAMBER BUILDING



CHAMBER BUILDING

CHAMBER BUILDING

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CHAMBER BUILDING

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SANBORN MAP

Maxim Technologies, Inc.
721 S. Packard
Kansas City, Kansas 66105

Standard Acid Company
Iola, Kansas

Date: November 1901

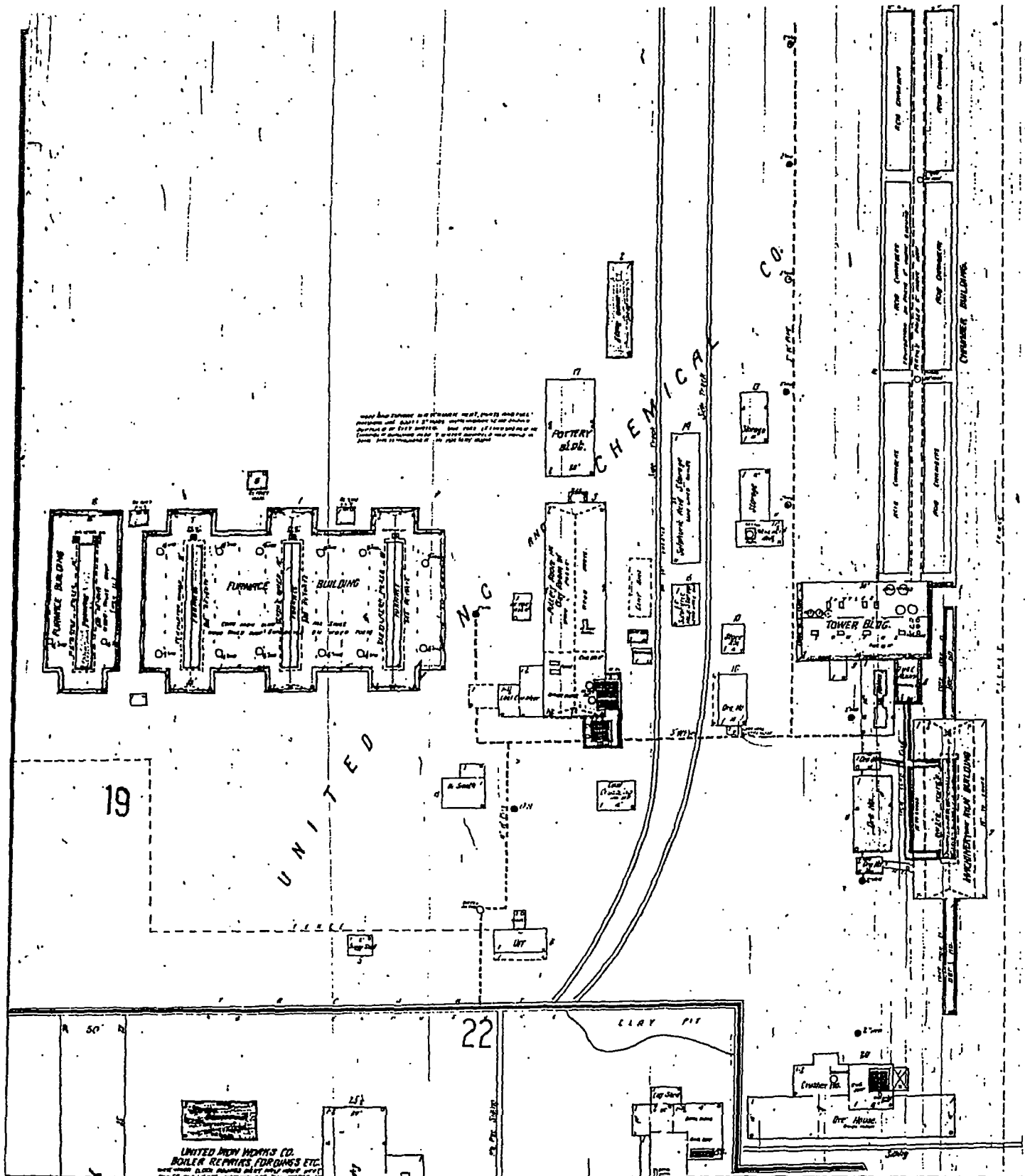
Source: Kansas Historical Society

Project No.: 3390184

Scale: N.T.S.

N





SANBORN MAP

Maxim Technologies, Inc.
721 S. Packard
Kansas City, Kansas 66105

United Zinc and Chemical Company
Iola, Kansas

Date: December 1905

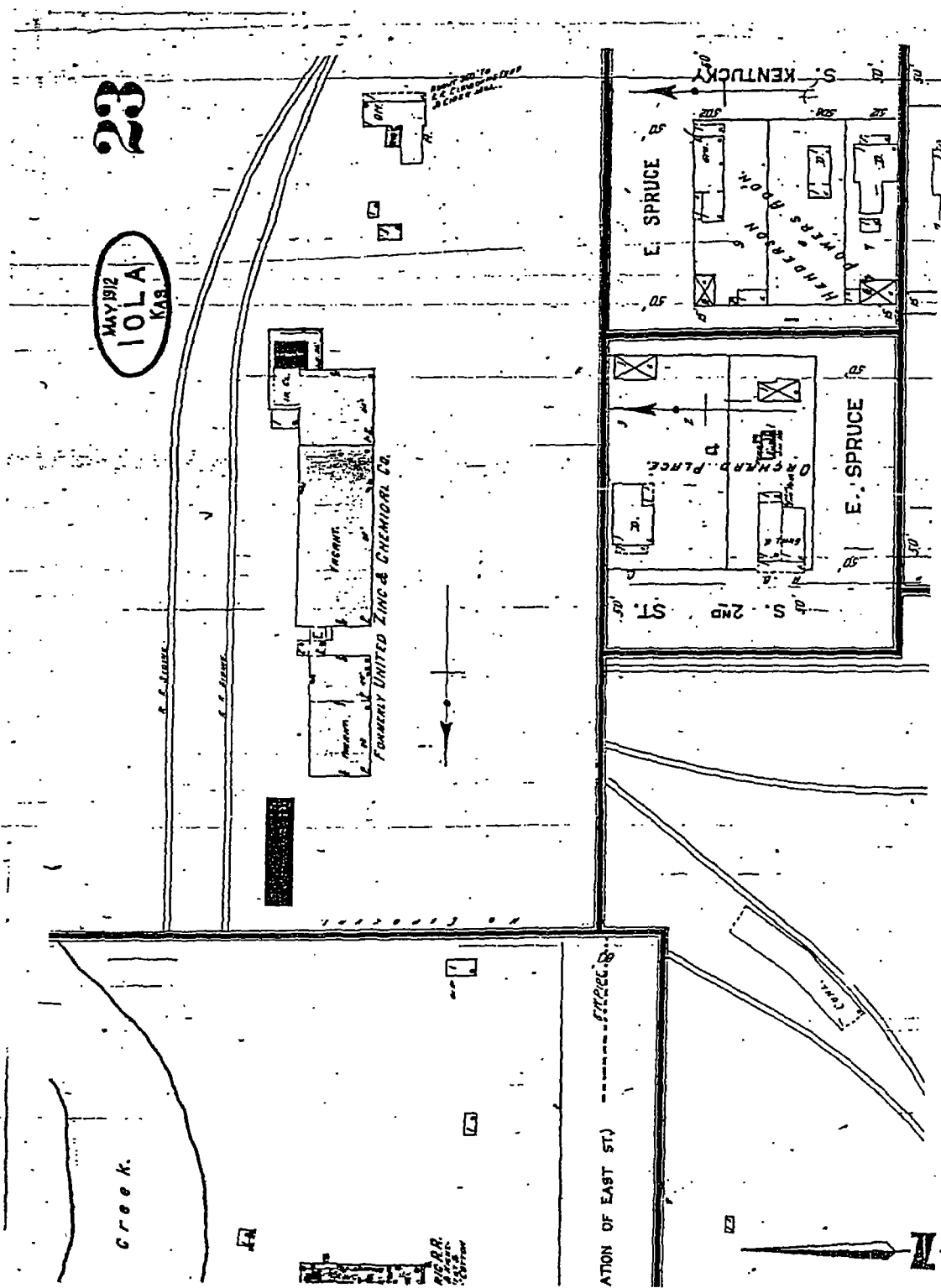
Source: Kansas Historical
Society

Project No.: 3390184

Scale: N.T.S.

N





SANBORN MAP

Maxim Technologies, Inc.
721 S. Packard
Kansas City, Kansas 66105

Former United Zinc and Chemical
Company
Iola, Kansas

Date: May 1912

Source: Kansas Historical
Society

Project No.: 3390184

Scale: N.T.S.

APPENDIX B OWNERSHIP TABLES

10921B

Time of Request: Monday, July 27, 2009 12:02:51 EST
Client ID/Project Name:
Number of Lines: 965
Job Number: 1842:169189872

Research Information

Service: LEXSEE(R) Feature
Print Request: Current Document: 1
Source: Get by LEXSEE(R)
Search Terms: 1996 u.s. Dist. Lexis 22493

Send to: N/L, 1002MN
EPA ORC REGION VII KANSAS CITY
901 N 5TH ST
KANSAS CITY, KS 66101-2907



LEXSEE 1996 U.S. DIST. LEXIS 22493

HORSEHEAD INDUSTRIES, INC., d/b/a ZINC CORPORATION OF AMERICA,
Plaintiff, v. ST. JOE MINERALS CORPORATION, et al., Defendants.

No. 94-C-98-B

**UNITED STATES DISTRICT COURT FOR THE NORTHERN DISTRICT OF
 OKLAHOMA**

1996 U.S. Dist. LEXIS 22493

April 2, 1996, Filed; April 3, 1996, Entered

CASE SUMMARY:

PROCEDURAL POSTURE: Plaintiffs, current and past owners of zinc smelting refinery facility, brought an action against defendant former owner pursuant to the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA), 42 U.S.C.S. §§ 9601-9675, and various common law theories of liability. The action arose out of past and future response and remedial costs incurred for the cleanup of hazardous substances. The former owner asserted a counterclaim.

OVERVIEW: Hazardous substances generated at a zinc smelting refinery were detected at certain locations at the refinery facility and at certain areas around the facility. The current facility owner brought the action against past facility owners, which arose out of response actions from various zinc smelter and recovery operations occurring on the property located in Bartlesville, Oklahoma from 1907 to 1993. The current facility owner sought contribution for response costs incurred and to be incurred with respect to the on-site area. Thereafter, the current facility owner settled with all but one of the past facility owners, who agreed to jointly fund the investigation and necessary corrective measures for the on-site area. The former owner asserted counterclaims seeking contribution for its response costs allegedly incurred for the off-site area. The court made an equitable allocation of on-site and off-site remedial costs, past and future, between the parties for the cleanup of the hazardous substances. The current and past facility owners were allocated 70 percent of the costs and the former owner was allocated 30 percent of the total costs.

OUTCOME: The court granted judgment in favor of the current and past facility owners for 30 percent of the on-site response costs expended plus prejudgment interest thereon. The former owner was granted judgment against the current and past facility owners on the former owner's counterclaim for 70 percent of the off-site response costs plus prejudgment interest thereon.

CORE TERMS: zinc, smelter, retort, off-site, cadmium, electrolytic, refinery, horizontal, emission, remedial, on-site, operable, soil, hazardous substances, remediation, smelting, surface water, successor, plant, site, CONCLUSIONS OF LAW, successor liability, prejudgment interest, environmental, air, residue, continuity, groundwater, equitable, removal

LexisNexis(R) Headnotes

Environmental Law > Hazardous Wastes & Toxic Substances > CERCLA & Superfund > Enforcement > Cost Recovery Actions > Potentially Responsible Parties > Owners & Operators

Environmental Law > Hazardous Wastes & Toxic Substances > CERCLA & Superfund > Enforcement > Cost Recovery Actions > Strict Liability

Real Property Law > Environmental Regulation > General Overview

[HN1] Under the Comprehensive Environmental Response, Compensation and Liability Act, 42 U.S.C.S. §§ 9601-9675, current and former owners and operators of a "facility" are liable when there has been a release or a threatened release of a hazardous substance from the facility and the release or threatened release has caused

the claimant to incur response costs. 42 U.S.C.S. § 9607(a).

Environmental Law > Hazardous Wastes & Toxic Substances > CERCLA & Superfund > Enforcement > Cost Recovery Actions > Potentially Responsible Parties > Generators

Environmental Law > Hazardous Wastes & Toxic Substances > CERCLA & Superfund > Enforcement > Cost Recovery Actions > Potentially Responsible Parties > Owners & Operators

Environmental Law > Hazardous Wastes & Toxic Substances > CERCLA & Superfund > Enforcement > Cost Recovery Actions > Strict Liability

[HN2] Responsible parties under the Comprehensive Environmental Response, Compensation and Liability Act, 42 U.S.C.S. §§ 9601-9675, include (1) the current owner and operator of the facility; and (2) the owner or operator of the facility at the time hazardous substances were disposed of. 42 U.S.C.S. § 9607(a).

Environmental Law > Hazardous Wastes & Toxic Substances > CERCLA & Superfund > General Overview
Real Property Law > Environmental Regulation > General Overview

[HN3] There is no threshold amount of a release for purposes of liability under the Comprehensive Environmental Response, Compensation and Liability Act, 42 U.S.C.S. §§ 9601-9675; any amount of leaching, emitting or discharging of a hazardous substance to the environment constitutes a "release."

Environmental Law > Hazardous Wastes & Toxic Substances > CERCLA & Superfund > Enforcement > Cost Recovery Actions > Elements

Real Property Law > Environmental Regulation > General Overview

[HN4] Liability under the Comprehensive Environmental Response, Compensation and Liability Act, 42 U.S.C.S. §§ 9601-9675, attaches only where a release or threatened release of a hazardous substance "causes the incurrence of response costs." Private party plaintiffs that seek to recover their costs must show some causal link between the release of the hazardous substance and the incurrence of response costs.

Environmental Law > Hazardous Wastes & Toxic Substances > CERCLA & Superfund > General Overview
Real Property Law > Environmental Regulation > General Overview

[HN5] See 42 U.S.C.S. § 9601(24).

Environmental Law > Hazardous Wastes & Toxic Substances > CERCLA & Superfund > General Overview
Real Property Law > Environmental Regulation > General Overview

[HN6] See 42 U.S.C.S. § 9601(23).

Environmental Law > Hazardous Wastes & Toxic Substances > CERCLA & Superfund > General Overview
Real Property Law > Environmental Regulation > General Overview

[HN7] 42 U.S.C.S. § 9601(24).

Environmental Law > Hazardous Wastes & Toxic Substances > CERCLA & Superfund > Cleanup Standards
Environmental Law > Hazardous Wastes & Toxic Substances > CERCLA & Superfund > Enforcement > Abatement

Real Property Law > Environmental Regulation > General Overview

[HN8] "Removal" actions under the Comprehensive Environmental Response, Compensation and Liability Act, 42 U.S.C.S. §§ 9601-9675, are short-term measures implemented to abate a present and serious threat to public welfare, health or the environment and should contribute to the efficient performance of any long-term remedial action. A "remedial action," in contrast, offers a long-term or permanent solution to the problem. Remedial actions typically are permanent attempts to restore environmental quality by significantly reducing the volume, toxicity or mobility of the hazardous substances. 42 U.S.C.S. § 9621.

Environmental Law > Hazardous Wastes & Toxic Substances > CERCLA & Superfund > Cleanup Standards
Environmental Law > Hazardous Wastes & Toxic Substances > CERCLA & Superfund > Enforcement > Cost Recovery Actions > Elements

Environmental Law > Hazardous Wastes & Toxic Substances > CERCLA & Superfund > Enforcement > Defenses & Exemptions > National Contingency Plan

[HN9] Once having established that its costs were "response costs," a private party must prove affirmatively that its response costs were both necessary and consistent with the National Contingency Plan (NCP) in order to recover under the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA), 42 U.S.C.S. §§ 9601-9675. For response costs to be "necessary" under CERCLA, plaintiffs must establish that the costs were incurred in response to a threat to public health or the environment, and in response to the NCP in

effect at the time. Normal costs of operation do not qualify as "necessary" response costs under this standard.

***Environmental Law > Hazardous Wastes & Toxic Substances > CERCLA & Superfund > General Overview
Real Property Law > Environmental Regulation > General Overview***

[HN10] The allocation of response costs under the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA), 42 U.S.C.S. §§ 9601-9675, among liable parties is "an inexact science." Accordingly, CERCLA permits courts to establish an allocation through use of such equitable factors as the court determines are appropriate.

***Environmental Law > Hazardous Wastes & Toxic Substances > CERCLA & Superfund > General Overview
Real Property Law > Environmental Regulation > General Overview***

[HN11] Under the Comprehensive Environmental Response, Compensation and Liability Act, 42 U.S.C.S. §§ 9601-9675, "sole cause" means proximate or legal cause.

Civil Procedure > Federal & State Interrelationships > Federal Common Law > General Overview

Environmental Law > Hazardous Wastes & Toxic Substances > CERCLA & Superfund > Enforcement > Cost Recovery Actions > Potentially Responsible Parties > Arrangers

Environmental Law > Hazardous Wastes & Toxic Substances > CERCLA & Superfund > Enforcement > Cost Recovery Actions > Potentially Responsible Parties > Successors

[HN12] The need for national uniformity of liability under the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA), 42 U.S.C.S. §§ 9601-9675, requires that federal common law govern the imposition of successor liability under CERCLA.

Business & Corporate Law > Mergers & Acquisitions > Liabilities & Rights of Successors > General Overview

Environmental Law > Hazardous Wastes & Toxic Substances > CERCLA & Superfund > Enforcement > Cost Recovery Actions > Potentially Responsible Parties > Successors

Real Property Law > Environmental Regulation > General Overview

[HN13] The broad remedial purpose of the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA), 42 U.S.C.S. §§ 9601-9675, requires application of the more flexible continuity of enterprise

theory of successor liability to prevent responsible parties from evading CERCLA liability through strategic behavior or transactional technicalities.

Business & Corporate Law > Mergers & Acquisitions > Liabilities & Rights of Successors > Successor Liability Doctrine

[HN14] To find successor liability under the "continuity of enterprise" approach, courts look to the following factors: (1) whether the successor retains the same employees; (2) whether the successor retains the same supervisory personnel; (3) whether the successor retains the same production facilities in the same location; (4) whether the successor produces the same products; (5) whether there is a continuity of assets and business operations; (6) whether the successor retains the same business name; and (7) whether the successor holds itself out to the public as a continuation of the previous enterprise. Like any other equitable multi-factor test, all factors need not be present to support the imposition of successor liability under the continuity of enterprise doctrine.

Business & Corporate Law > Mergers & Acquisitions > Liabilities & Rights of Successors > Successor Liability Doctrine

Environmental Law > Hazardous Wastes & Toxic Substances > CERCLA & Superfund > Enforcement > Cost Recovery Actions > Potentially Responsible Parties > Successors

Real Property Law > Environmental Regulation > Liabilities & Risks > Successor Corporations

[HN15] The continuity of enterprise doctrine evolved to address situations where a purchaser structures an acquisition deal under traditional principles of successor liability so as to avoid liability and thereby frustrate the remedial purposes of the Comprehensive Environmental Response, Compensation and Liability Act, 42 U.S.C.S. §§ 9601-9675. Courts must consider whether the acquisition was part of an effort to continue the business of the former corporation yet avoid its existing or potential state or federal environmental liability. The doctrine is especially applicable to situations where a party shifts all environmental liability, existing and potential, onto a corporate shell that is left either with "dirty assets" or no assets at all.

Business & Corporate Law > Mergers & Acquisitions > Liabilities & Rights of Successors > Successor Liability Doctrine

Environmental Law > Hazardous Wastes & Toxic Substances > CERCLA & Superfund > Enforcement >

27. Like any other equitable multi-factor test, all eight factors need not be present to support the imposition of successor liability under the continuity of enterprise doctrine. *HRW Sys. v. Washington Gas Light Co.*, 823 F. Supp. 318, 334 (D. Md. 1993) (applying multi-factored *de facto* merger test); *In re Acushnet River & New Bedford Harbor*, 712 F. Supp. 1010 (D. Mass. 1989) (same).

28. [HN15] The continuity of enterprise doctrine evolved to address situations where, as here, a purchaser structures an acquisition deal under traditional principles of successor liability so as to avoid liability and thereby frustrate the remedial purposes of CERCLA. *State of New York v. N. Storonske Cooperage Co.*, 174 B.R. 366, 373 (N.D. N.Y. 1994) [*55] (doctrine developed to prevent strategic behavior by purchasers to structure acquisition deals so as to avoid liability); *Carolina Transformer Co.*, 978 F.2d at 838 (courts must consider whether the acquisition "was part of an effort to continue the business of the former corporation yet avoid its existing or potential state or federal environmental liability").

29. The doctrine is especially applicable to situations where a party shifts all environmental liability--existing and potential--onto a corporate shell that is left either with "dirty assets" or, as is the case here, no assets at all. *Mexico Feed & Seed*, 980 F.2d at 489; *Carolina Transformer Co.*, 978 F.2d at 838.

30. Plaintiffs have a direct nexus to the operations of the National Zinc enterprise from 1907-73.¹⁰ In particular, Salomon stepped directly into the National Zinc operation. In a similar context, a federal district court ruled that, [HN16] even where the precise factors for successor liability were not present, equitable considerations dictated that the company that "essentially placed itself into [another's] shoes, so to speak, by continuing all aspects [of the other [*56] company's] prior practices would succeed to the environmental liabilities of the first company." *United States v. Atlas Minerals & Chem., Inc.*, 1995 U.S. Dist. LEXIS 13097 at *262.

10 Many facts exist in the record that support no per se successor liability by Salomon, St. Joe and ZCA. However, the concept of substantial continuity of interest liability under CERCLA is supported in the record.

31. [HN17] The fact that Salomon purchased National Zinc before the enactment of CERCLA does not preclude the imposition of successor liability under the continuity of enterprise theory. *American National Can Co. v. Kerr Glass Mfg. Corp.*, 1990 U.S. Dist. LEXIS 10,999 (N.D.Ill. 1990) at *20 op. withdrawn, in part, recons. denied, in part, 1990 U.S. Dist. LEXIS 11,417 (N.D.Ill. Aug. 29, 1990) (requiring notice of CERCLA

liability in a 1938, pre-CERCLA asset purchase would be "anomalous"); *United States v. Peirce*, 1995 U.S. Dist. LEXIS 4042 (N.D.N.Y. February 18, 1995); [*57] *Northwestern Mut. Life Ins. Co. v. Atlantic Research Corp.*, 847 F. Supp. 389 (E.D. Va. 1994) (1972 asset purchase).

32. [HN18] "Federally permitted releases", which are defined by reference to existing law, are not considered hazardous and are not therefore subject to the provisions of CERCLA. *Joy v. The Louisiana Conference Association of Seventh-Day Adventists*, 1992 U.S. Dist. LEXIS 9901, 1992 WL 165670 at *4 (E.D. La.). See 42 U.S.C. § 9607(j).

33. Recovery can be made, however, for permitted release response costs that (1) were not expressly permitted, (2) exceeded the limitations of the permit, or (3) occurred at a time when there was no permit. *United States v. Iron Mountain Mines, Inc.*, 812 F. Supp. 1528, 1541 (E.D. Cal. 1992), citing *State of Idaho v. Bunker Hill*, 635 F. Supp. 665, 673-74 (Idaho 1986).

34. The party claiming exemption for the release of hazardous substances (in this case, the Plaintiffs) bears the burden of proving which releases are federally permitted and what portion of the damages are allocable to the federally permitted releases. *Lincoln Properties, Ltd.*, 1993 U.S. Dist. LEXIS 1251, 1993 WL 217429 [*58] at *16 (E.D. Cal.), citing *United States v. Shell Oil Co.*, 1992 U.S. Dist. LEXIS 3947, 1992 WL 144296 at *6 (C.D. Cal.). See also *In re Acushnet River and New Bedford Harbor*, 722 F. Supp. 893 (D. Mass. 1989)¹¹

11 Plaintiffs point out that Acushnet River in this case would require Cyprus to meet a burden of production: introducing evidence sufficient to warrant a factfinder's conclusion that the damages from exemptions are indivisible. *Id.* at n.9. The Court notes, however, the Acushnet River court pointed out that neither the Restatement (Second) of Torts nor decided CERCLA cases explicitly required such a burden be placed on the opposing party. *Id.*

35. As to both the retort smelter and the electrolytic refinery, Plaintiffs have failed to meet their burden of proving which releases were federally permitted and which were not. The Court finds, and the parties admit, that individual sources of lead and cadmium cannot be fingerprinted.

36. [HN19] Plaintiffs are entitled to prejudgment interest [*59] for amounts recoverable under CERCLA. 42 U.S.C. § 9607(a)(4).

37. Prejudgment interest "accrues from the later of (i) the date payment of a specified amount is demanded

exacting standards applicable to operating zinc refineries. The system had a dual purpose of both operations and compliance with CERCLA. *G. J. Leasing Co. v. Union Electric Co.*, 854 F. Supp. 539, 562 (S.D. Ill. 1994); and see e.g., *Dedham Water Co. v. Cumberland Farms Dairy*, 770 F. Supp. 41, 42-3 (D. Mass. 1991), aff'd, 972 F.2d 453 (1st Cir. 1992).

17. Of the \$ 11,728,100.00 expended and claimed by Plaintiffs for stormwater processing, the Court concludes one-half of same (\$ 5,864,050.00) is "cleanup or removal of released hazardous substances" under CERCLA, [*51] and the other half related to the ongoing operations of the zinc refinery from 1980 to 1993-94.

18. [HN10] The allocation of CERCLA response costs among liable parties is "an inexact science.". Accordingly, CERCLA permits courts to establish an allocation through use of "such equitable factors as the court determines are appropriate." CERCLA "does not

[ILLEGIBLE SLIP OP PAGE 39]

several factors, a few factors, or only one determining factor . . . depending on the totality of circumstances presented to the court." *Environmental Trans. Sys. Inc. v. Ensco, Inc.*, 969 F.2d 503, 509 (7th Cir. 1992). See also *Atlantic Richfield Co. v. American Airlines*, 836 F. Supp. 763 (N.D. Okla. 1993).

22. Pursuant to their acknowledged commitment, Plaintiffs are allocated full responsibility for all remediation costs associated with their goethite, nickel/cobalt and Cherryvale waste pile deposits from the electrolytic process.

23. The phrase "caused solely by" in section 107(b)(3) incorporates traditional notions of proximate or legal causation. *Lincoln Properties*, 823 F. Supp. 1528 at 1539-42; *G.J. Leasing Co., Inc. v. Union Elec. Co.*, 854 F. Supp. 539, 567 (S.D. Ill. 1994) [*52] [HN11] ("Under CERCLA, 'sole cause' means proximate or legal cause."), aff'd, 54 F.3d 379 (7th Cir. 1995).

24. [HN12] The need for national uniformity of CERCLA liability requires that federal common law govern the imposition of successor liability under CERCLA. *United States v. Carolina Transformer Co.*, 978 F.2d 832, 837-38 (4th Cir. 1992); *Smith Land & Improy. Corp. v. Celotex Corp.*, 851 F.2d 86, 91-2 (3d Cir. 1988) ("In resolving the successor liability issues here, the district court must consider national uniformity; otherwise, CERCLA aims may be evaded easily by a responsible party's choice to arrange a merger or consolidation under the laws of particular states which unduly restrict successor liability."); *Louisiana-Pacific Corp. v. Asarco, Inc.*, 909 F.2d 1260, 1263 (9th Cir. 1990) (agreeing with Third Circuit that "successor liability under CERCLA is

governed by federal law.") Cf. *Denver v. Adolph Coors Co.*, 813 F. Supp. 1471, 1474 (D. Colo. 1992) (federal common law governs issues of corporate capacity to be sued); see also November 17, 1995, Order (rejecting application of state law of "piercing [*53] the corporate veil" to find parent AMCO liable for actions of its subsidiaries BZC and LSSC).

25. [HN13] The broad remedial purpose of CERCLA requires application of the more flexible continuity of enterprise theory of successor liability to prevent responsible parties from evading CERCLA liability through strategic behavior or transactional technicalities. *United States v. Mexico Feed & Seed Co.*, 980 F.2d 478, 488 (8th Cir. 1992) ("in the CERCLA context, the imposition of successor liability under the 'substantial continuation [a.k.a. continuity of enterprise]' test is justified by a showing that in substance, if not in form, the successor is a responsible party."); *Atlantic Richfield Co. v. Blosenski*, 847 F. Supp. 1261, 1283-85 (E.D. Pa. 1994); see also, *Kleen Laundry & Dry Cleaning Servs. v. Total Waste Management*, 867 F. Supp. 1136, 1141 (D. N.H. 1994).

26. [HN14] To find successor liability under the "continuity of enterprise" approach, courts look to the following factors:

- * whether the successor retains the same employees;
- * whether the successor retains the same supervisory personnel;
- * whether the successor retains [*54] the same production facilities in the same location;
- * whether the successor produces the same products;
- * whether there is a continuity of assets and business operations;
- * whether the successor retains the same business name; and
- * whether the successor holds itself out to the public as a continuation of the previous enterprise.

Carolina Transformer Co., 978 F.2d at 838.

"causes the incurrence of response costs." Private party plaintiffs that seek to recover their costs must show some causal link between the release of the hazardous substance and the incurrence of response costs.

10. The statute is quite broad regarding what costs might be considered as response or remedial costs. [HN5] 42 U.S.C. § 9601(24) states:

The term (remedial action) includes, but is not limited to, such actions at the location of the release as storage, confinement, perimeter protection using dikes, [*47] trenches, or ditches, clay cover, neutralization, cleanup of released hazardous substances and associated contaminated materials, recycling or reuse, diversion, destruction, segregation of reactive wastes, dredging or excavations, repair or replacement of leaking containers, collection of leachate and run-off, on-site treatment or incineration, provision of alternative water supplies, and any monitoring reasonably required to assure that such actions protect the public health and welfare and the environment.

Regarding "remove" or "removal", [HN6] 42 U.S.C. § 9601(23) states:

The cleanup or removal of released hazardous substances from the environment, such actions as may be necessary [sic] taken in the event of the threat of release of hazardous substances into the environment, such actions as may be necessary to monitor, assess, and evaluate the release or threat of release of hazardous substances, the disposal of removed materials, or the taking of such other actions as may be necessary to prevent, minimize, or mitigate damage to the public health or welfare or to the environment, which may otherwise result from a release or threat of release.

[*48] Regarding "remedy" or "remedial action," [HN7] 42 U.S.C. § 9601(24) states:

Those actions consistent with permanent remedy taken instead of or in addition to removal actions in the event of a release or threatened release of a hazardous substance into the environment, to prevent or

minimize the release of hazardous substances so that they do not migrate to cause substantial danger to present or future public health or welfare or the environment.

11. [HN8] CERCLA "removal" actions are short-term measures implemented "to abate a present and serious threat to public welfare," health or the environment and should contribute to the efficient performance of any long-term remedial action. *Bolin v. Cessna Aircraft Co.*, 759 F. Supp. 692, 711 (D. Kan. 1991); *Versatile Metals*, 693 F. Supp. 1563, 1577 (E.D. Pa. 1988); see also 42 U.S.C. § 9604(a)(2).

12. A "remedial action," in contrast, offers "a long-term or permanent solution to the problem." Remedial actions typically are permanent attempts to restore environmental quality by significantly reducing the volume, toxicity or mobility of the hazardous substances. [*49] 42 U.S.C. § 9621; *Greene v. Product Mfg. Corp.*, 842 F. Supp. 1321, 1325 (D. Kan. 1993); *Fairchild Semiconductor Corp. v. EPA*, 769 F. Supp. 1553, 1555 (N.D. Cal. 1991), *aff'd*, 984 F.2d 283 (9th Cir. 1993).

13. Different National Contingency Plan ("NCP") standards apply to "removal" and "remedial" actions. The NCP requirements for "removals" are "relatively simple" in comparison to the "more detailed procedural and substantive" NCP requirements applicable to remedial actions. *Amland Properties Corp. v. Alcoa*, 711 F. Supp. 784, 795 (D. N.J. 1989), *aff'd*, 31 F.3d 1170 (3d Cir. 1994).

14. [HN9] Once having established that its costs were "response costs," a "private party must prove affirmatively that its response costs were both necessary and consistent with the NCP in order to recover under CERCLA." *County Line Inv. Co. v. Tinney*, 933 F.2d 1508, 1512 (10th Cir. 1991).

15. For response costs to be "necessary" under CERCLA, plaintiffs must establish that the costs were incurred in response to a threat to public health or the environment, and in response to the NCP [*50] in effect at the time. Normal costs of operation do not qualify as "necessary" response costs under this standard. *Amoco Oil Co. v. Borden, Inc.*, 889 F.2d 664, 669-70 (5th Cir. 1989); *In re Bell Petroleum Servs.*, 3 F.3d 889, 904-06 (5th Cir. 1993); *County Line*, 933 F.2d at 1512; *City of Philadelphia v. Stepan Chem. Co.*, 748 F. Supp. 283, 290 (E.D. Pa. 1990).

16. A wastewater treatment system has operated at the Bartlesville Facility since 1958. The System was upgraded in 1972 and 1980, in part to comply with more

ACTIVITY	COST
General/Part B/ MTR (through 1994)	\$ 889,582
General/Part B/ MTR (1995)	\$ 153,055
RCRA/AOC (through 1994)	\$ 519,882
RCRA/AOC (1995)	\$ 317,987
Pre-AOC	\$ 268,400
Management Comm. (1995 Costs)	\$ 1,166,583
SUBTOTAL	\$ 10,134,354
Prejudgment interest on 30% thereof	?
TOTAL ON-SITE COSTS	* ?
PLUS PREJUDGMENT INTEREST	

8 Plaintiffs are entitled to be reimbursed 30 percent of this total, plus prejudgment interest from the date of filing this action, and Defendant Cyprus is entitled to be reimbursed 70 percent of its expenditures on Operable Unit One since August 1995, plus prejudgment interest from date of payment as calculated pursuant to the formula set out in 42 U.S.C. 9607(a) (4) (See Conclusions of Law Nos. 41-2 at p. 47).

[*45] CONCLUSIONS OF LAW

1. The Court has jurisdiction of this matter pursuant to 28 U.S.C. § 1331 and 42 U.S.C. §§ 9607 and 9613(f).

2. Any Finding of Fact above which might be properly characterized as a Conclusion of Law is incorporated herein.

3. The declarations of liability (the percentage allocation) set forth in the Findings of Fact above shall be binding in any subsequent action or actions to recover response costs or damages, on-site and off-site.

4. The Bartlesville Facility and the surrounding areas constitute a "facility" within the meaning of CERCLA. (Pretrial Stipulation No. 4).

5. [HN1] Under CERCLA, current and former owners and operators of a "facility" are liable when there has been a release or a threatened release of a hazardous substance from the facility and the release or threatened release has caused the claimant to incur response costs. 42 U.S.C. § 9607(a); *FMC Corp. v. Aero Indus.*, 998 F.2d 842, 845 (10th Cir. 1993).

6. [HN2] Responsible parties under CERCLA include (1) the current owner and operator of the facility; and (2) the owner or operator of the facility at the time hazardous [*46] substances were disposed of. 42 U.S.C. § 9607(a).

7. Hazardous substances generated at the Bartlesville Facility have been detected at certain locations at the Facility and at certain areas around the Facility. Pretrial Stipulation No. 3.

8. [HN3] There is no threshold amount of a release for purposes of CERCLA liability; any amount of leaching, emitting or discharging of a hazardous substance to the environment constitutes a "release." *Burlington N. R.R. v. Wood Indus. Inc.*, 815 F. Supp. 1384, 1391 (E.D. Wash. 1993).

9. [HN4] CERCLA liability attaches only where a release or threatened release of a hazardous substance

23; Lee Test. 67-68; Vogt Test. at 55; Defendant's Exs. 1428, 1880)

95. Plaintiffs excluded from costs they seek under CERCLA those costs that relate solely to the operation of the electrolytic zinc refinery. In addition, Plaintiffs are not seeking from Cyprus the costs associated with the maintenance of the goethite, nickel/cobalt and Cherryvale piles in the northwest portion of the Facility that were generated by the electrolytic refinery, such as the cost of spraying the piles with a dust suppressant. Plaintiffs also are not seeking future costs that will be incurred to regrade or remove those materials piles. (Janeck Test. at 45-46; Oliver 12/7 Test. at 34; Knapp Test. at 34; Rosasco Test. at 8)

96. Cyprus agrees that "RCRA and AOC Activities" are properly response costs under CERCLA. (Cyprus' Response to Plaintiffs' Supplemental Proposed Findings of Fact and Conclusions of Law, p. 65 at 197)

97. Regarding the costs incurred for stormwater collection and treatment, the Court finds that 50 percent of these costs are response costs under CERCLA, and 50 percent are operational and therefore not recoverable under CERCLA. Therefore, Plaintiffs [*42] are entitled to pre-judgment interest under the 70%-30% allocation on 50 percent of the requested \$ 11,728,100, (50% equals \$ 5,864,050.)⁶ Allocation of the response costs are subject to the 70%-30% split as outlined below.

6 Plaintiffs, in their Response to Defendant's Supplemental Proposed Findings of Fact and Conclusions of Law, provide to the Court a table of figures that they say are correct, which includes a total of \$ 11,728,000 for Stormwater Processing Cost. However, the Court notes that, according to Plaintiffs' Ex. 1341, the correct figure should be \$ 11,728,100.

98. As previously stated, the Court concludes an equitable allocation of on-site and off-site (Operable Units 1 and 2) remedial costs, past and future, is 70% to Plaintiffs (Salomon, St. Joe, ZCA) and 30% to Defendant, Cyprus. Excepting therefrom only the \$ 5.6 million off-site (Operable Unit 1) costs expended by agreement of Salomon and Cyprus (total \$ 11.2 million) as of August 1995; and 50% of the surface water collection and treatment [*43] costs of \$ 11,728,100.00, which the Court concludes was 50% normal operations of the zinc smelting refinery and 50% remedial under CERCLA. In other words, Cyprus recoups none of its \$ 5.6 million from Plaintiffs (Salomon, St. Joe or ZCA) regarding off-site Operable Unit 1, under the 70%-30% allocation, and Plaintiffs recoup 50% of the \$ 11,728,100.00 for surface water collection and treatment, i.e., \$ 5,864,050.00 under the 70%-30% allocation.

99. Specifically, the 70%-30% split applies to the following past on-site response costs expended by Plaintiff:⁷

7 This calculation differs from Plaintiffs' Demonstrative Exhibit "E" at trial because Plaintiffs admitted they made an addition error in their arithmetic. Plaintiffs state that their calculations in their Response to Defendant's Supplemental Proposed Findings of Fact and Conclusions of Law are correct (however, see Footnote 6, *supra*). Plaintiffs seem to have trouble with arithmetic, as is reflected in their Footnote 5, page 7 of their Response, wherein they state that the years from 1931 to 1950 and 1958 to 1974 (35 years) total 27 years, which is obviously incorrect.

[*44]

ACTIVITY	COST
Stormwater Processing Cost (1980-1994 - 1/2 of total of \$ 11,728,100.)	\$ 5,864,050
Limerock	\$ 294,915
ZCA-Administrative Costs	\$ 391,500
RSA Charges:	
Facility Study	\$ 180,669
Groundwater Monitoring	\$ 87,731

pended by Cyprus on the CAFO. (Oliver 12/7 Test. 29-30; Lee Test. 36-37, 63; Plaintiffs' Ex. 1343; Defendant's Ex. 1360)

87. In December 1994, ODEQ selected a remedy for Operable Unit One in the Off-Site Area intended to address the portions of this area likely to impact human health. The remedy involves remediation of Soil containing lead and cadmium in excess of specified action levels. (Plaintiffs' Ex. 82)

88. In selecting the remedy for Operable Unit One, the ODEQ found:

In approximately 1907, three horizontal retort zinc smelters commenced operation at this location. Two of the smelters appear to have ceased operation in the 1920s. In 1976, the remaining horizontal retort smelter was converted to a electrolytic zinc refinery, [*38] which is not currently operative. During the time the horizontal retorts were in operation, metals contained in the airborne emissions from the smelter [sic] were deposited over much of the area of Bartlesville that lies west of the Caney River . . . Airborne emissions from historical smelting operations and associated activities appear to be the predominant mechanism of dispersal of the contaminants across the Site . . .

(Plaintiffs' Ex. 82, pp. 1, 4)

89. Scott Thompson, the ODEQ's Project Manager for the Off-Site Area, stated:

Based on investigations and sampling conducted by the U.S.E.P.A., ODEQ and other parties concerning the area surrounding the Bartlesville Facility, ODEQ has determined that the soil contamination (which requires the remediation being conducted under Operable Unit One) is not attributable to operation of the electrolytic refinery and related activities at the Bartlesville Facility from 1977 to 1993. ODEQ and EPA have considered the source of heavy metals in soils which is the subject of the Operable Unit One remediation to be emissions and solid wastes from smelter operations at the Bartlesville Facility from 1907-1976.

(Plaintiffs' [*39] Ex. 1214)

The ODEQ also found:

In addition, spillage and wind transport of ore concentrates from rail cars may have also contributed to elevated metals at the Site. It is also likely that solid waste materials from the smelters were physically moved to areas within the Site boundaries for uses [sic] as fill or for other purposes.

(Plaintiffs' Ex. 82 at 4)

90. The goethite piles generated by the electrolytic refinery commencing in 1977 located in the northwest section of the Bartlesville Facility have contributed some to the air emissions and groundwater contamination on-site and off-site, but certainly to a lesser extent and degree than the horizontal retort smelters. (Defendant's Ex. 40; Bodenhamer Test. 9, 65-66) The lead and cadmium emissions from the electrolytic refinery operations were indivisible from that of the lead and cadmium emissions of the earlier horizontal retort smelters.

91. The primary source of contaminants from the Bartlesville Facility to Operable Unit 1 is from air emissions and solid waste vehicular transport of materials from the facility for use in driveways, as road bed or as fill. The lead and cadmium in the soils cannot be attributed [*40] to any particular company's operation at the Bartlesville Facility. (Lee Test. at 34-36, 41, 62; Vogt Test. at 66, 90-92; Van Aken Test. at 32-33; Zunkel Test. at 21-24)

92. The Court does not conclude that operation of horizontal retort smelters conducted in Collinsville, Oklahoma, from 1911 to 1918, and at Blackwell, Oklahoma, from 1921 to 1974, has any particular relevance by way of analysis or comparison to the on-site or off-site conditions at the Bartlesville Facility.

93. The Operable Unit 2 remedy has not been selected. It will address portions of the Off-Site Area that may pose undue risks to environmental receptors, including surface water runoff, and is focused on streams and a drainage basin to the south of the Bartlesville Facility. (Oliver 12/7 Test. at 11-14; Plaintiffs' Ex. 485)

94. Operable Unit 2 has more direct affinity with the historical drainage area for the National Zinc smelter operations but it also was impacted by lead and cadmium generated by more than 80 years of zinc smelting and refining. (Oliver 12/7 Test. at 11-12, 27-28, 71; Oliver Test. 12/11 at 16-18, 30; Oliver Test. 12/14 at 87; Van Aken Test. at 8-9; Runnells Test. 4-8, 10-12, 16-17; Rosasco [*41] Test. 50-52, 164; Paulsen Test. 6-7, 22-

operations commencing in 1907. (Janeck Test. 39; Lawmaster Test. 15-16; Bodenhamer Test. 82; Defendant's Ex. 43; Plaintiffs' Ex. 68)

75. In September 1993, [*33] subsequent to the issuance of the AOC, ZCA ceased the operation of the electrolytic zinc refinery and operations of the zinc refinery have not been resumed. (Janeck Test. 40-41; Lawmaster Test. 29-30; Wagoner Test. 56-57, 62).

76. In July 1995, ZCA was issued a Part B permit under RCRA which superseded the AOC. In addition, the ODEQ assumed responsibility from EPA for the Bartlesville Facility remediation. Under the Part B permit, ZCA was required to continue its investigation and potential remediation of the lead and cadmium present in the soils, surface water and groundwater at the Bartlesville site. The focus of the permit now is on closure of the Facility. (Lawmaster Test. 22-23; Rosasco Test. 158-59; Wagoner Test. 57-58; Plaintiffs' Ex. 449)

77. The source of the lead and cadmium in the soils, surface water and groundwater in many instances cannot be identified or "fingerprinted" to any particular company's operations at the Bartlesville Facility. However, the probable source of some of the lead and cadmium found at a particular location or at a particular SWMU at the Bartlesville facility might reasonably be inferred from the operations conducted at that location or SWMU. Each [*34] of the parties' operations from 1907 through 1993 contributed to the lead and cadmium that are still present in the media at the facility, are the subject of investigation and will be addressed through remediation, if it is ultimately determined levels requiring remediation are present. (Lawmaster Test. 15-16; Knapp Test. 149; Runnels Test. 4-9, 19-20, 27; Paulsen Test. 7-8, 14, 28, 29; Lee Test. 68; Bodenhamer Test. 16-17, 81-82, 104-105; Plaintiffs' Ex. 384; Defendant's Ex. 74)

78. In addition, lead and cadmium are present in retort residues that were deposited at the facility property since the horizontal retort smelters operated from 1907 to 1976. It is not yet known if lead and cadmium levels exist from the retort residues at levels requiring remediation. (Lawmaster Test. 33-39, 203-210, 230; Knapp Test. 149; Paulsen Test. 15-16; Bodenhamer Test. 19, 87, 95; Plaintiffs' Exs. 488 (Table 3-13), 504, 505; Defendant's Exs. 1856, 1878, 1879)

79. There probably will not be a "single comprehensive remedy" for the Bartlesville Facility because, according to the corrective measures study currently underway, different media at the site may require different remedies. A capping remedy [*35] on part of the site may be required, the cost of which would be driven by the aerial extent of the cap. (Lawmaster Test. 43-44; Oliver Test. 58-59; Rosasco Test. 59-61; Wagoner Test. 55-56; Plaintiffs' Ex. 488, pp. 1-3, section 1.2)

80. In 1992, following initiation of certain emergency soil removal in the Off-Site Area, the EPA proposed the Off-Site Area for inclusion on the CERCLA National Priorities List based on perceived need to address lead and cadmium in the soils. (Oliver 12-7 Test. at 7-9; Plaintiffs' Exs. 83 and 111 (HRS documentation record) at 24)

81. The EPA determined to defer any listing of the Off-Site Area on the NPL based on the commitment of the ODEQ to assume oversight responsibility for the selection and performance of necessary response actions. The EPA delegated authority to ODEQ for this purpose pursuant to a state delegation pilot project. (Oliver 12/7 Test, at 9)

82. On February 2, 1994, EPA issued a Unilateral Administrative Order (UAO) pursuant to CERCLA directing Salomon, Cyprus and Kerramerican, Inc., to continue the emergency soil removal work previously conducted by the EPA in the Off-Site Area Unit 1. Cyprus and Salomon agreed to participate in the [*36] performance of the UAO. Kerramerican declined to participate. The UAO was not issued to ZCA, but ZCA already was under the on-site RCRA AOC with EPA. (Oliver Test. 5-7; Lee Test. 16-17, 54-56; Zaneck Test. 138-39; Plaintiffs' Ex. 65; Defendant's Ex. 43 (AOC))

83. ODEQ, with concurrence of the EPA, determined to divide the Off-Site Area into two operable units for study and remediation: Operable Unit 1 to address perceived risks to human health from soil contamination, and Operable Unit 2 to address perceived risks to ecological receptors, including surface water runoff and groundwater seepage. (Oliver 12/7 Test. at 11)

84. In April 1994, Cyprus and Salomon entered into a Consent Agreement and Final Order (CAFO) with ODEQ to perform the remedial investigation, feasibility study and remedial design for remedies selected to address concern in the two operable units in the Off-Site Area. (Oliver 12/7 Test. at 9-10; Plaintiffs' Ex. 66)

85. In February 1994, Cyprus and Salomon entered into an agreement to share equally the costs incurred by each of them to perform the UAO and the CAFO, and further agreed that this division of costs for these items would be final as between them, with [*37] no right of future reallocation or adjustment. --(Oliver 12/7 Test. at 17; Plaintiffs' Ex. 1340)

86. By August 1995, Cyprus and Salomon each had expended approximately \$ 5.6 million to implement the UAO and the CAFO. Because Cyprus implemented the August 1995 remedial action CAFO with ODEQ, with which Salomon declined to proceed, Cyprus spent an additional approximately \$ 700,000.00 through October 1995, making a total of approximately \$ 6.3 million ex-

throughout the operations of the zinc smelters. (Zunkel Test. at 16; Runnells Test. at 44-45; Marlatt Test. at 10, 12, 16, 21; Rosasco Test. at 163-64; Paulsen Test. at 21-22; Lee Test. at 67-68; Bodenhamer Test. at 70-73; Plaintiffs' Ex. 186; Defendant's Exs. 1622-23)

67. The BZC, LSSC and NZCI smelters did not utilize any system to contain, treat or control surface water runoff until 1970. As a result, surface water transported lead and cadmium generated from the BZC, LSSC and NZCI smelter operations throughout the Bartlesville Facility property, and contaminated surface water was permitted to be discharged in an uncontrolled manner off the Bartlesville Facility property. (Runnells Test. at 10-12, 47; Rosasco Test. at 164; Plaintiffs' Exs. 386, 504, 505; Lawmaster Test. 114-23; Defendant's Ex. 1849)

68. The BZC, LSSC and NZCI/NZC smelters contributed to the lead and cadmium located throughout the soils, surface water and groundwater both on-site and off-site [*29] at the Bartlesville Facility that is being addressed by the ongoing response actions. As recently as 1988, ZCA learned that it was capturing less than 10% of the cadmium in its emissions rather than the 90% asserted in the equipment specifications. (Defendant's Ex. 597)

69. About every ten years from 1928 to 1973, NZCI made various improvements in the zinc smelting process intended to reduce lead, cadmium and sulfur dioxide emissions and residues. (Paulsen Test. 13, 24-26; Van Aken Test. 20-23, 45-48; Zunkel Test. 45-48; Vogt Test. 5-6, 54-55, 58, 62-63, 78-80; Marlatt Test. 22-23; Bodenhamer Test. 70-73, 77-78; Rosasco Test. 11-12, 169; Knapp Jr. Test. 4-6; Plaintiffs' Exs. 443, 490; and Defendant's Exs. 540, 597, 1054, 1622-23)

70. In 1972, environmental regulators required NZCI to construct a water impoundment and pumpback system in an attempt to contain and treat surface water containing lead, cadmium and sulfur dioxide, from past and present smelting operations, prior to it being discharged from the Bartlesville Facility. This system would reduce off-site runoff contamination but could increase on-site contamination. (Vogt Test. 54-55, 58, 129; Rosasco Test. 11-12; Knapp Jr. [*30] Test. 4-6, 11-12; Bodenhamer Test. 77-78; Plaintiffs' Exs. 133, 134, 209, 271, 386; Defendant's Ex. 54)

71. In July 1991, the Bartlesville Facility became subject to regulation under RCRA because ZCA was actively managing hazardous wastes at the Facility. ZCA was required to obtain a permit from EPA in order to continue to manage the wastes in what the EPA refers to as "solid waste management units" or "SWMUs." "SWMUs are defined as any discernable waste management unit at a RCRA facility from which hazardous constituents might migrate. The definition does not include

accidental spills from production areas . . ." (Deft. Ex. 36 at 213). ZCA sought a permit for 15 SWMUs at the Bartlesville Facility. (Lawmaster Test. 5-6, 10-11; Janeck Test. 36-37 and Defendant's Exs. 33, 36, 63-65)

72. The EPA identified an additional 22 SWMUs; the EPA ultimately identified a total of 37 SWMUs which constituted areas at the Bartlesville Facility that needed to be investigated by ZCA because of the potential that these areas contained elevated levels of lead and cadmium. EPA concluded that there were SWMUs, evidencing the fact that different operations had existed at the same physical location, and [*31] each had contributed lead and cadmium at the facility. ZCA was required to investigate the 37 SWMUs to determine if they contained elevated levels of lead and cadmium that would have to be addressed and submit a closure plan for each SWMU. The investigation and potential remediation involved the soils, surface water and groundwater at the Bartlesville Facility. The SWMUs involved contamination as a result of the various zinc smelting operations from 1907 until the early 1990s. (Lawmaster Test. 7, 11-12, 15; Janeck Test. 38-39; Bodenhamer Test. 97-98, 100-03; and Defendant's Exs. 36 and 74)

73. ZCA retained a consulting firm, Roberts, Schornick and Associates ("RSA"), to assist it in the investigation and potential remediation of the SWMUs identified by the EPA. RSA, on behalf of ZCA, commenced various studies that culminated in various reports to the EPA and to the Oklahoma Department of Environmental Quality ("ODEQ"). The investigation and reporting performed by RSA from 1991 through September 1993 concerned ZCA's current operations, including designing closure plans for the goethite and nickel/cobalt piles, negotiating with Salomon and St. Joe in Plaintiffs' indemnity dispute, and [*32] studying the nature and extent of the lead and cadmium present in the soils, surface water and groundwater at the Bartlesville Facility, as well as other matters. (Lawmaster Test. 15-16, 125-32, 134-35, 137-38, 146-54, 153-54; Janeck Test. 39-40, Plaintiffs' Exs. 70, 112, 130, 139, 142, 143, 144-45, 146, 150, 204-05, 231, 480-81, 487; Defendant's Demonstrative Exs. C and D)

74. In September 1993, while ZCA was still operating the electrolytic zinc refinery, ZCA entered into an administrative order on consent docket No. U.S. VI-006(h)93-H ("AOC") with the EPA pursuant to Section 3008(h) of RCRA, 42 U.S.C. § 6928(h). The hazardous substances of concern to EPA that were to be addressed by ZCA through the AOC and its investigation and suggested corrective action were the lead and cadmium present in the soils, surface water and the groundwater throughout the Bartlesville Facility. The EPA made a specific finding that the lead and cadmium present at the Bartlesville Facility was the result of 80 years of historic

naces. In the period of the operation of the horizontal retort smelters ("BZC" and "LSSC" (1907-1924) and NZCI and successors (1907-1976)), it was the practice of smelter operators to collect this residue in the basement of the retort furnaces, remove it from the furnaces and dispose of the residue on the surface of the ground. The chemical composition and amount of retort residue was a function of the efficiency of the horizontal retort smelter process. The less efficient the operation, the more lead and cadmium was left in the residue. (Zunkel Test. at 12-14; Bodenhamer Test. at 84-85; Plaintiffs' Exs. 186, 404)

64. The volume of zinc smelting (including emissions and residues) in the horizontal retort smelters is generally measured in retort years as follows: ⁴

BZC-LSSC (1907-1924) 139,968 retort years: 30%

NZCI (or NZC) (1907-1976) 327,424 retort years: 70% ⁵

These percentages derive from the following number of retorts operated by each smelter. (Defendant's Ex. 1876; Defendant's Ex. 1677; Defendant's Ex. 1882; and Paulsen Test. at 6)

BZC: 3,456 to 5,184 retorts from 1907-24;

LSSC: 2,880 [*26] to 3,456 retorts from 1907-24; and

NZCI/NZC: 4,864 retorts from 1907-76.

(Rosasco Test. 44-46; Plaintiffs' Exs. 402, pp. 8, 10, 11; 313)

4 Plaintiffs, in their Response to Defendant's Supplemental Proposed Findings of Fact and Conclusions of Law, state: "Here, the same hazardous substances are being addressed, and each party engaged is in the recovery of zinc. Thus, the time of use and volume of production--i.e., "retort years"--provides an appropriate place in which to initiate an equitable allocation approach." (Response Brief, p. 70).

5 The Court herein is required to make an equitable allocation of the past and future on-site and off-site remedial costs. Thus, the principal dispute centers in who should bear the costs from 1907-1972 for contamination caused by the orphan, NZCI. Clearly, Cyprus Amax, successor of BZC and LSSC by way of a predecessor's merger with its owner parent, AMCO, in 1958, should

bear the remediation cost for the on-site and off-site contamination caused by BZC and LSSC from 1907 to 1924. (Court Order Nov. 17, 1995, Doc. # 185). (Plaintiffs' contention that Cyprus should be responsible as an "arranger" from 1951 to 1957 is not supported by the record). As between Cyprus and Plaintiffs (Salomon, St. Joe and ZCA), the Court concludes that Plaintiffs, on a theory of substantial continuity of interest, should bear the remedial costs of the orphan share, plus its own operations from 1974 to 1993, when the Facility ceased operation. The Court is not pleased with this equitable result, but under the circumstances of CERCLA's strict liability and the parties before the Court, it is as equitable a result as can and should be achieved.

[*27] 65. In allocating costs as set forth hereafter, the 70%-30% allocation between Plaintiffs and Cyprus, respectively, can be further supported by the following rationale:

(A) Natural attenuation of older emissions;

(B) Gradual emissions improvements over the seventy years of the NZCI and NZC operations;

(C) Most of the vehicle transfer of residues from on-site to off-site were caused or permitted by NZCI after 1924;

(D) NZCI and Plaintiffs operated generally over the entire 150-acre Bartlesville Facility after BZC and LSSC ceased operation in 1924; and

(E) From about 1930 until Plaintiffs' ownership and occupation of the site, NZCI moved demolition debris and retort residues from BZC's and LSSC's western portion of the site to the central portion.

66. The lead, cadmium and sulphur dioxide from the BZC, LSSC and NZCI/NZC smelters were disbursed and deposited throughout the soils and surface water at the Bartlesville Facility as a result of both air and ground deposition. The horizontal retort smelter roasters had uncontrolled emissions of sulfur dioxide which, when combined with moisture, creates sulfurous acid, which, when it comes in contact with lead [*28] and cadmium in soils; the metals are mobilized and can move more freely through the soils and surface water. In 1928, NZCI incorporated some improvements in the sulfur dioxide emissions. However, sulfur dioxide emissions continued

52. Further, Salomon/NZC also financed construction of an electrostatic precipitator on the sinter plant to provide interim controls on particulate emissions. This precipitator was installed in 1974. (Vogt Test. 23-25, 47-50; Plaintiffs' Exs. 90, 102)

53. While operating the retort smelter, which was shut down on July 31, 1976, NZC received numerous extensions of its air emissions variance (originally obtained by NZ Oklahoma) from the state of Oklahoma. All such variances were submitted to the EPA, and the EPA never approved or disapproved them. (Vogt Test. at 6, 42, 48)

* First extension: until February 20, 1975. This variance was submitted to the EPA in March 1974, and the EPA never approved or disapproved it. (Vogt Test. at 47-48; Plaintiffs' Exs. 91, 155, 265);

* Second extension: until February 20, 1976. This variance extended the shutdown date for the retort furnaces from May 31, 1975, until May 31, 1976; provided for shutdown of the sinter plant on August 31, 1976; and for startup of the electrolytic refinery on May 31, 1976. This extension also was submitted to the EPA and was never approved [*22] or disapproved. (Plaintiffs' Ex. 94, 98)

* Third extension: until July 31, 1976 for shutdown of the smelter and completion of the electrolytic refinery. This was submitted to the EPA on June 4, 1976, and was never approved or disapproved. (Plaintiffs' Ex. 98)

54. The electrolytic zinc refinery process is fundamentally different than the horizontal retort process. The retort process is pyrometallurgical in nature, using high temperature operations to process zinc-bearing raw materials. The electrolytic process is a chemical process based on hydrometallurgy and electrometallurgy, *i.e.*, leaching solids and plating zinc with electric current in solution. (PTO, Stip. 63 at p. 16)

55. The electrolytic refinery was constructed at a cost in excess of \$ 40 million, more than \$ 23 million above the original estimate. (Knobler Dep. at 188; Rothschild Test. at 9, 11; Plaintiff's Exs. 105, 170)

56. Construction of the refinery was funded by loans from Salomon to NZC. These loans subsequently were converted into capital contributions. (Rothschild Test. at 11-14; Plaintiff's Ex. 1196)

57. Salomon/NZC undertook a sizeable expenditure to clean up the operation by replacing the retort process [*23] with the electrolytic process. The principal motivation of Salomon, however, after acquiring the zinc smelting refinery at a "bargain-basement price" in 1974, was long-term legitimate profit, not altruism. (Defendant's Ex. 452; *see also* Defendant's Exs. 422, 425, 447)

58. Effective May 22, 1974, the EPA conditionally approved a variance for Salomon/NZC with an expiration date of February 20, 1974, and a "final compliance date" of July 1, 1974, for the sintering process, and May 31, 1975, for the retort furnace smelting process. (39-Fed. Reg. at 17,982).

59. On or about December 30, 1983, the Salomon subsidiary then holding the capital stock of NZC sold that stock to Lee Consulting Group pursuant to a Stock Purchase Agreement. (Plaintiffs' Ex. 285) The president of Lee Consulting Group was a former Salomon executive and director of Salomon's National Zinc subsidiary. (Defendant's Ex. 1082)

IV. SOURCES OF CONTAMINATION

A. The BZC and LSSC Smelters

60. The BZC, LSSC and NZCI smelters were horizontal retort smelters. Horizontal retort smelting is a pyrometallurgical process, meaning that it is a burning process that, in the case of the BZC, LSSC and NZCI smelters, [*24] used natural gas to fuel the process. Because horizontal retorting is a pyrometallurgical process, the process generates significant quantities of air emissions. (Trial Testimony of Dr. Alan D. Zunkel ("Zunkel Test.") at 6-7; Plaintiffs' Ex. 402)

61. Ore concentrates received at the plant were first roasted in roasters; the roasted material was then, together with coal and certain other materials, heated in a sinter plant to agglomerate the roasted ore into a porous aggregate; the sinter from the sinter plant was then fed to retort furnaces where the zinc was vaporized, collected in condensers, and thereafter made into final products. (PTO Stip. No. 53 and Plaintiffs' Demonstrative Ex. D)

62. The primary source points for air emissions from the type of horizontal retort process operated at the BZC, LSSC and NZCI smelters were the roasters, the retort furnaces and in the case of BZC and LSSC clinkering. If not captured or contained, significant quantities of lead and cadmium were released into the environment from the horizontal retort process through air emissions. (Zunkel Test. at 7-8)

63. In addition, the horizontal retort process generates a residue that contains lead and cadmium [*25] from the burning of zinc concentrates in the retort fur-

persons or property on account of discharges prior to the Closing Date into the air or water or on the land by any plant or plants now or heretofore located on premises presently occupied by [NZ Oklahoma], or any laws or regulations governing pollution matters (all such debts, liabilities and obligations being hereinafter referred to as "Pollution Liabilities")

(Defendant's Ex. 92)

36. Salomon/NZC agreed with NZ Oklahoma to keep intact substantially all of NZ Oklahoma's organization, officers, employees, goodwill and customer base. (Defendant's Ex. 92, § 1.03)

37. Salomon/NZC retained most of the operational employees at the Bartlesville Facility, as well as existing management. (Vogt Test. at 167-69; Knobler Dep. at 62; Defendant's Exs. 92, 106, 117, 238, 425, 643) ²

2 Plaintiffs' contention that such personnel had to be retrained when the facility switched to the electrolytic process is irrelevant to the issue of whether NZ Oklahoma employees were retained by Salomon/NZC.

[*18] 38. Thomas Vogt, who served as vice president of NZCI when NZCI owned the site, and who served as president of NZ Oklahoma when NZ Oklahoma owned the site, was one of two non-Salomon members of NZC's board of directors. (Vogt Test. at 41)

39. Vogt continued to make decisions regarding day-to-day operations of the Bartlesville Facility. (Vogt Test. at 176; Defendant's Ex. 129)

40. Frederick Jeffery, who served as president of NZCI and vice president of IM&M when IM&M/NZCI owned the site, and who served as chairman or the board of NZ Oklahoma when NZ Oklahoma owned the site, was the second of two non-Salomon members of NZC's board of directors. (Vogt Test. at 41)

41. For two and a half years, Salomon/NZC continued to use the same production facilities as did previous owners of the site: the horizontal retort smelter, the acid plant, the sintering plant and all other auxiliary operations. (Vogt Test. at 159-60; Defendant's Ex. 685)

42. After Salomon/NZC converted to the electrolytic process, it used some of the older buildings as maintenance shops and storage areas. (Vogt Test. at 103)

43. The facility continued to produce zinc after Salomon/NZC's acquisition and continued to serve [*19]

the same customers as before the acquisition. ³ (Vogt Test. at 103-04)

3 The retort smelter produced Prime Western zinc, which is about 98.5 percent zinc and 1.5 percent lead. Two years later, after startup of the electrolytic facility, the site produced "high-grade" zinc, which is about 99.95 percent zinc, that could be sold to new customers. (Knobler Dep. at 201-03) However, to retain the former customer base, Salomon/NZC continued to produce Prime Western zinc with the electrolytic facility by adding lead or aluminum to the high-grade zinc. (Vogt Test. at 180-84)

44. The Bartlesville Facility continued as a custom smelter after Salomon/NZC's acquisition, and it continued to produce zinc, cadmium and sulfuric acid from zinc concentrates and secondaries. (Knobler Dep. at 93-4; Vogt Test. at 103-04, 167; Defendant's Exs. 447, 695, 1331)

45. Salomon/NZC bought the name, assets, business, goodwill, contracts and accounts receivable from NZ Oklahoma. (Vogt Test. at 165; Defendant's Exs. 92, 105, 1372)

46. Salomon/NZC [*20] used the name "National Zinc Company" because it was a name that was recognized in the industry. (Vogt Test. at 30; Defendant's Exs. 105)

47. Salomon/NZC's logo was essentially the same as that used by NZ Oklahoma; the company name at the top of the letterhead was in the same type size and style, but removed "inc." from the name and removed the zip code. (Defendant's Exs. 769, 752)

48. Salomon/NZC continued to sell zinc slab made in molds that imprinted the National Zinc logo. (Vogt Test. at 171, 173)

49. Salomon/NZC held itself out to the general public as a continuation of the National Zinc enterprise that had operated at the Bartlesville Facility since 1907. (Vogt Test. at 186-88; Defendant's Exs. 1369, 1375)

50. Salomon/NZC ran the retort smelter for two and a half years. During this time, the operation used some more advanced equipment to help reduce emissions and wastes from the horizontal retort process. (Zunkel Test. at 30-36, 58; Vogt Test. at 48; Marlatt Test. at 22-23; Plaintiffs' Exs. 98, 402, p. 12)

51. Also during this time, NZC continued to maintain and improve the surface water impoundment and pumpback system, thereby somewhat reducing releases of lead and cadmium [*21] into the Off-Site Area by containing any such pollution on-site. (Vogt Test. 54-58)

management decisions concerning the facility, usually during monthly visits to Bartlesville. (Vogt Test. at 9; Defendant's Exs. 829-845; Van Aken Test. 18-19)

* While managing NZ Oklahoma, both Jeffrey and Vogt had office space in New York leased from IM&M. (Defendant's Ex. 629)

* JVSC purchased the National [*14] Zinc name, and continued using the same industry-recognized logo on equipment, railroad tank cars, advertisements, billboards, stationary, the molds used to cast metal (the brand was seen on the metal), and the plant itself. Further, the logo was a registered brand on the commodity exchanges and had been used in the industry since 1907. (Vogt Test. at 30)

* Both operating employees and operating management of the facility under IM&M/NZCI remained the same after the facility was sold to JVSC/NZ Oklahoma. (Vogt Test. at 157; Defendant's Ex. 846 at p. 3)

* The sale included the "entire business, its name, good will, and all plant facilities together with essentially all its assets and liabilities". (Defendant's Ex. 846 at p. 3)

* A "Memorandum Concerning Acquisition of Assets of National Zinc Co . . ." written by Frederick Jeffrey and Thomas Vogt states that, after JVSC acquired the Bartlesville Facility, "the Company will continue the business presently engaged in by National Zinc Company, Inc., . . . in substantially the same form, except that the new company will primarily refine and process ores belonging to others, rather than on its own account". (Defendant's Ex. 626 at 1) [*15]

* The Memorandum further stated that JVSC was organized "for the purpose of acquiring and carrying on the zinc smelting and refining business of National Zinc Company, Inc., . . .". (Defendant's Ex. 626 at 2)

29. To address air emissions concerns, NZ Oklahoma increased the height of the stacks on the sulfuric

acid plant and the sinter plant in order to increase dissipation. (Vogt Test. at 18)

30. In February 1973, NZ Oklahoma received a one-year air emissions variance from the state of Oklahoma regarding the particulate and visible emission regulations for operation of the retort smelter. (Vogt Test. at 23; Plaintiff's Ex. 87)

31. On or about February 11, 1974, NZ Oklahoma sold the Bartlesville Facility to Iskane, Inc., (a subsidiary created by Salomon, Inc., to purchase the facility) for \$ 4 million and a promise to replace the retort smelters with an electrolytic zinc processing refinery. (Rothschild Test. at 11; Vogt Test. at 26)

32. Iskane, Inc., changed its name to National Zinc Company ("NZC").

33. Salomon admits liability for the actions of NZC. (Opening Statements at 25)

34. As a condition of the purchase, NZ Oklahoma obtained a one-year continuation of its air emissions [*16] variance from the state of Oklahoma. (Plaintiffs' Ex. 155) This variance allowed NZC to operate the retort smelter while constructing the electrolytic plant that eventually would replace the smelter, about two and a half years later. (Vogt Test. at 22-24, 47-48; Plaintiffs' Exs. 155, 158)

35. Salomon/NZC assumed millions of dollars of specified liabilities, including accounts payable, taxes payable, accrued payroll and employee benefits. (Plaintiffs' Ex. 155) Salomon, however, expressly attempted to avoid assuming environmental liabilities. Salomon's Letter of Intent stated that:

[NZ Oklahoma] will sell and convey all of its assets, properties, business and good will, including the use of its name and open contracts . . . excluding, however, in each case any liabilities for pollution matters

Rather, the Letter provided that Salomon would: indemnify the [NZ Oklahoma] shareholders against distributee liability, if any, for pollution matters, in excess of the amount of escrow for such matters

(Defendant's Ex. 100) Also, the Acquisition Agreement excluded:

liabilities or obligations, contingent or otherwise . . . arising out [*17] of or relating or attributable to any damage to

15. In approximately 1920, Beer NY changed its name to International Minerals and Metals Corporation ("IM&M"), a New York corporation. (Plaintiffs' Ex. 827)

16. Also in or about 1920, National Zinc Company, Inc., ("NZCI") was incorporated. Assets of NZNY were transferred to NZCI, whose parent company also was IM&M. IM&M continued [*10] operation of the smelter through NZCI until 1972. (Trial Testimony of Thomas Vogt ("Vogt Test.") at 6-9; Plaintiffs' Exs. 545, 783)

17. In 1972, IM&M sold the Bartlesville Facility (minus the inventory of raw materials) for \$ 400,000, to a group of former NZCI management personnel who incorporated in Oklahoma under the name J-V Smelting Company ("JVSC"). JVSC subsequently changed its name to National Zinc Company, Inc. ("NZ Oklahoma"). NZ Oklahoma no longer exists. (Vogt Test. at 10-13, 30, 166; Plaintiffs' Exs. 248, 535, 545)

18. Plaintiff Salomon is a Delaware corporation with its principal place of business in New York. Salomon has stipulated that, for purposes of this litigation, it would consent to be treated as the parent corporation of National Zinc Company ("NZC"), a Delaware corporation that purchased the Bartlesville Facility from NZ Oklahoma in February 1974, and operated it until NZC was sold to a third party in December 1983. *See infra*, PP31-59.

19. NZC continued to operate the horizontal retort smelter at the Bartlesville Facility from February 1974 to July 1976, at which time the retort smelter operation ceased. Beginning in December 1976, NZC commenced operation [*11] of an electrolytic zinc refinery built with funds from Salomon at a cost of \$ 41.5 million. As discussed more fully below, the electrolytic zinc refinery was a different zinc smelting process than the prior horizontal retort process. *See infra* PP54-57.

20. Plaintiff St. Joe is a New York corporation with its principal place of business in St. Louis, Missouri. St. Joe was a former subsidiary of Plaintiff Fluor (collectively, "St. Joe"). St. Joe purchased the Bartlesville Facility in August 1984 and operated the Facility until August 1987. St. Joe has admitted that it was the owner and operator of the Bartlesville Facility during that period of time. St. Joe operated the electrolytic zinc refinery only. (PTO, Stip. 14 at p. 8)

21. Plaintiff ZCA purchased the Bartlesville Facility in August 1987 and is the current owner of the Facility. ZCA has admitted that it was the owner and operator of the Bartlesville Facility from August 1987 to date. ZCA operated the electrolytic zinc refinery only. ¹ (PTO, Stip. 15 at p. 8)

1 The Plaintiffs in this case, Salomon, St. Joe and ZCA, have reached a settlement among themselves concerning the percentage of past and future allocation of damages for on-site and off-site remedial costs.

[*12] 22. The BZC and LSSC smelters were located on what is now the western portion of the Bartlesville Facility, a total of approximately 38 acres equally divided. The NZCI smelter was located in the south part of the Bartlesville Facility.

III. CONTINUITY OF INTEREST

23. IM&M, through various corporate names and structures, retained control of the National Zinc smelter at the Bartlesville Facility from 1907 until 1972, when the Facility was sold to JVSC. (Findings of Fact 13-16)

24. JVSC was formed by Frederick Jeffrey, president of NZCI and vice president of IM&M, and Thomas Vogt, vice president of NZCI, to purchase the NZCI site that they, as management officials, had been responsible for operating for IM&M. (Vogt Test. at 10)

25. Jeffrey and Vogt acquired financing by bringing together investors for the purchase. (Vogt Test. at 10)

26. The purchase agreement did not expressly address environmental liabilities, but it did provide generally for JVSC to assume NZCI's liabilities (with certain non-environmental exceptions). (Vogt Test. at 15; Plaintiffs' Ex. 248 (§ 2.1(b) and Ex. C))

27. Bartlesville, Oklahoma, residents owned 65 percent of NZ Oklahoma, while Jeffrey and [*13] Ker-american, Inc., a Canadian corporation, owned the remainder. There is no evidence that the NZ Oklahoma stockholders also owned stock in IM&M. (Vogt Test. at 11-12; Plaintiff's Exs. 244, 245)

28. Due to shortage of capital, NZ Oklahoma's horizontal retort refinery business primarily was via tolling contracts and/or sales agency agreements with raw materials suppliers, rather than purchase of raw materials, production and sales (Vogt Test. at 16-17); however, most other aspects of the business did not change:

* Jeffrey and Vogt were managers of the National Zinc facility under both IM&M and JVSC/NZ Oklahoma. (Vogt Test. at 10) Jeffrey was chairman of the board of NZ Oklahoma and an "active executive"; Vogt became president and chief executive officer of NZ Oklahoma. (Defendant's Ex. 846, pp. 3, 5)

* Both before and after the sale, Jeffrey was instrumental in operating and

I. JURISDICTION, VENUE AND PROCEDURAL BACKGROUND

1. Plaintiffs brought this action pursuant to the Comprehensive Environmental Response, Compensation and Liability Act ("CERCLA"), 42 U.S.C. §§ 9601-9675, and various common law theories of liability.

2. This Court has jurisdiction pursuant to 28 U.S.C. §§ 1331, 1367. Venue is proper in this district pursuant to 28 U.S.C. § 1391(b) and 42 U.S.C. § 9613(b).

3. The suit arises out of response actions that resulted from various zinc smelter and recovery operations that occurred on property [*6] located in Bartlesville, Oklahoma (the "Bartlesville Facility"), from 1907 to 1993. Three response actions currently are underway. The first, being ordered under the Resource Conservation and Recovery Act of 1976, as amended ("RCRA"), addresses the approximately 150 acres where horizontal retort zinc smelters and an electrolytic zinc refinery physically operated (the "On-Site Area" or "Bartlesville Facility"). (See Pretrial Order ("PTO"), Stip. 1, 2 at pp. 6-7)

4. In addition, surrounding areas within Bartlesville (the "Off-Site Area") are being addressed in two separate and distinct operable units under CERCLA. Operable Unit One addresses the portions of the Off-Site Area containing soils with lead and cadmium above designated action levels considered most likely to impact human health. Operable Unit Two concerns certain ecological threats and is focused on a stream system located to the south of the Bartlesville Facility. (See 12/7 Trial Testimony of Robert H. Oliver ("Oliver Test.") at 11-16)

5. In February 1994, ZCA brought this action against St. Joe, Fluor, Salomon and Cyprus, seeking contribution for response costs incurred, and to be incurred, with respect to the [*7] On-Site Area.

6. In August 1994, ZCA entered into a settlement with St. Joe, Fluor and Salomon by which these parties, all now aligned as Plaintiffs, are jointly funding the investigation and necessary corrective measures for the On-Site Area. Cyprus has not participated in the Plaintiffs' remedial efforts regarding the On-Site Area. (See PTO, Stip. 40, 42, 43 at p. 12; Oliver 12/7 Test. at 32-34; Trial Testimony of Thomas E. Janeck ("Janeck Test.") at 45)

7. As discussed more fully below, Salomon and Cyprus have participated in certain response actions in the Off-Site Area. Cyprus has asserted counterclaims against Plaintiffs seeking contribution for response costs it has allegedly incurred for the Off-Site Area. Plaintiff Salomon seeks a declaratory judgment against Cyprus for its

equitable share of response costs to be incurred in the Off-Site Area. (PTO at 2)

8. Hazardous substances generated at the Bartlesville Facility have been detected at the Facility and at certain areas around the Facility. (PTO, Stip. 3 at 7)

9. Both the On-Site Area and the Off-Site Area are "facilities" within the meaning of CERCLA Section 101(9), 42 U.S.C. § 9601(9). Further, [*8] a "release" of "hazardous substances" within the meaning of CERCLA Sections 101(14) and 101(22) has occurred at both the On-Site Area and the Off-Site Area. (PTO, Stip. 4 at p. 7)

II. THE PARTIES

10. Beginning in 1907, three horizontal retort smelters commenced operation at the Bartlesville Facility. One of those smelters was owned by the Bartlesville Zinc Company (the "BZC smelter") and operated from 1907 to 1924. A second smelter was owned by the Lanyon-Starr Smelting Company (the "LSSC smelter") and operated from 1907 to 1924. The properties used for these smelter operations were owned by LSSC and/or BZC until 1930. The parent corporation of BZC and LSSC was American Metals Company (Limited) ("AMCO"). (November 17, 1995, Order, at 4-12)

11. Cyprus is a Delaware corporation with its principal place of business in Colorado. Cyprus is the surviving entity of a merger between Cyprus Minerals Company and Amax, Inc., in December 1993, and as such is the successor to Amax, Inc., which was formerly known as and is the successor company to AMCO. Cyprus has admitted that it became the corporate successor to AMCO in 1957. (Id., Plaintiffs' Ex. 284)

12. This Court previously [*9] has found that AMCO controlled the operations of the BZC and LSSC smelters from 1907 to 1924. Accordingly, the Court has held that Cyprus, as the admitted successor to AMCO, is liable as a former owner/operator under Section 107(a)(2) of CERCLA, 42 U.S.C. § 9607(a)(2). (Court Order Nov. 17, 1995, Doc. # 185).

13. The third horizontal retort smelter that began operation at the Bartlesville Facility in 1907 was built and owned by National Zinc Company, a New York corporation ("NZNY"). NZNY was incorporated in 1907 as a subsidiary of Beer, Sondheimer & Co. of Frankfurt, Germany ("Beer Germany"). (Defendant's Exs. 846 at 1, 679 at 2; Plaintiffs' Exs. 781, 819, 830)

14. In 1915, Beer, Sondheimer & Co. ("Beer NY") was incorporated in New York. The NZNY stock held by Beer Germany then was transferred to Beer NY. (Plaintiffs' Exs. 824, 827)

For SALOMON INC., plaintiff: William C Anderson, Dallas E Ferguson, Russell Wayne Kroll, Linda C Martin, Doerner Saunders Daniel & Anderson, Tulsa, OK. Laurence A Silverman, Robert M Hallman, Richard C Schoenstein, Cahill Gordon & Reindel, New York, NY.

For CYPRUS AMAX MINERALS COMPANY, defendant: William C Anderson, Russell Wayne Kroll, Linda C Martin, Doerner Saunders Daniel & Anderson, Tulsa, OK. Charles William Shipley, Mark Byron Jennings, Jamie Taylor Boyd, Blake K Champlin, Shipley Jennings [*2] & Champlin Tulsa, OK. Laurence A Silverman, Robert M Hallman, Cahill Gordon & Reindel, New York, NY. Mark A Turco, Susan H Ephron, Beveridge & Diamond, Washington, DC. Gerald Lynn Hilsher, Stoops Clancy & Hilsher, Tulsa, OK.

For CYPRUS AMAX MINERALS COMPANY, counter-claimant: William C Anderson, Russell Wayne Kroll, Linda C Martin, Doerner Saunders Daniel & Anderson, Tulsa, OK. Charles William Shipley, Mark Byron Jennings, Jamie Taylor Boyd, Blake K Champlin, Shipley Jennings & Champlin, Tulsa, OK. Laurence A Silverman, Robert M Hallman, Cahill Gordon & Reindel, New York, NY. Gerald Lynn Hilsher, Stoops Clancy & Hilsher, Tulsa, OK.

For HORSEHEAD INDUSTRIES, INC., counter-defendant: Michael D Graves, Susan L Gates, Hall Estill Hardwick Gable, Golden & Nelson, Tulsa, OK. Laurence A Silverman, Robert M Hallman, Richard C Schoenstein, Cahill Gordon & Reindel, New York, NY.

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For SALOMON INC., counter-defendant: William C Anderson, Dallas E Ferguson, Russell Wayne Kroll, Linda C Martin, Doerner Saunders Daniel & Anderson, Tulsa, OK. Laurence A Silverman, Robert M Hallman, Richard C Schoenstein, Cahill Gordon & Reindel, New York, NY.

JUDGES: THOMAS R. BRETT, UNITED STATES DISTRICT JUDGE.

OPINION BY: THOMAS R. BRETT

OPINION

FINDINGS OF FACT AND CONCLUSIONS OF LAW

This action is now commenced by Plaintiffs, Horsehead Industries, Inc. ("Horsehead"), d/b/a Zinc Corporation of America ("ZCA"), St. Joe Minerals Corporation ("St. Joe"), Fluor Corporation ("Fluor"), and Salomon, Inc. ("Salomon"), pursuant to the Comprehensive Environmental Response, Compensation and Liability Act, 42 U.S.C. §§ 9601-9675, and various common law theories against Cyprus Amax Minerals Company ("Cyprus"). The suit arises out of past and future response and remedial costs incurred that have and will result from zinc smelting refinery operations occurring on-site and off-site on property [*5] located in Bartlesville, Oklahoma, from 1907 to 1993. Cyprus asserts a counterclaim against Plaintiffs for some past and future response and remedial costs it has and will incur for off-site remediation.

The case was tried to the Court, sitting without a jury, on the dates of December 4, 5, 6, 7, 11, 14, 15, 18, 19 and 20, 1995. Following a consideration of the issues, evidence, arguments of counsel and applicable legal authority, the Court enters the following Findings of Fact and Conclusions of Law pursuant to *Fed.R.Civ.P.* 52.

FINDINGS OF FACT

Cost Recovery Actions > Potentially Responsible Parties > Successors

Real Property Law > Environmental Regulation > General Overview

[HN16] Even where the precise factors for successor liability are not present, equitable considerations dictate that a company that essentially places itself into another's shoes, so to speak, by continuing all aspects of the other company's prior practices would succeed to the environmental liabilities of the first company under the Comprehensive Environmental Response, Compensation and Liability Act, 42 U.S.C.S. §§ 9601-9675.

Business & Corporate Law > Mergers & Acquisitions > Liabilities & Rights of Successors > General Overview
Environmental Law > Hazardous Wastes & Toxic Substances > CERCLA & Superfund > Enforcement > Cost Recovery Actions > Potentially Responsible Parties > Successors

Real Property Law > Environmental Regulation > General Overview

[HN17] The fact that a party purchased an asset before the enactment of the Comprehensive Environmental Response, Compensation and Liability Act, 42 U.S.C.S. §§ 9601-9675, does not preclude the imposition of successor liability under the continuity of enterprise theory.

Environmental Law > Hazardous Wastes & Toxic Substances > CERCLA & Superfund > Enforcement > Defenses & Exemptions > General Overview

Real Property Law > Environmental Regulation > General Overview

[HN18] Under 42 U.S.C.S. § 9607(j) of the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA), 42 U.S.C.S. §§ 9601-9675, "federally permitted releases," which are defined by reference to existing law, are not considered hazardous and are not therefore subject to the provisions of CERCLA. Recovery can be made, however, for permitted release response costs that (1) were not expressly permitted, (2) exceeded the limitations of the permit, or (3) occurred at a time when there was no permit. The party claiming exemption for the release of hazardous substances bears the burden of proving which releases are federally permitted and what portion of the damages are allocable to the federally permitted releases.

Civil Procedure > Remedies > Judgment Interest > Prejudgment Interest

Environmental Law > Hazardous Wastes & Toxic Substances > CERCLA & Superfund > Enforcement >

Cost Recovery Actions > Potentially Responsible Parties > Transporters

Environmental Law > Hazardous Wastes & Toxic Substances > CERCLA & Superfund > Enforcement > Cost Recovery Actions > Strict Liability

[HN19] Plaintiffs are entitled to prejudgment interest for amounts recoverable under 42 U.S.C.S. § 9607(a)(4) of the Comprehensive Environmental Response, Compensation and Liability Act, 42 U.S.C.S. §§ 9601-9675. Prejudgment interest accrues from the later of (i) the date payment of a specified amount is demanded in writing, or (ii) the date of the expenditure concerned. 42 U.S.C.S. § 9607(a).

Civil Procedure > Remedies > Judgment Interest > Prejudgment Interest

Environmental Law > Hazardous Wastes & Toxic Substances > CERCLA & Superfund > Enforcement > Cost Recovery Actions > Potentially Responsible Parties > Transporters

Environmental Law > Hazardous Wastes & Toxic Substances > CERCLA & Superfund > Enforcement > Cost Recovery Actions > Strict Liability

[HN20] The Comprehensive Environmental Response, Compensation and Liability Act, 42 U.S.C.S. §§ 9601-9675, clearly requires a written demand for specified response costs. The Fifth Circuit Court of Appeals holds that a complaint constitutes a sufficient written demand for payment, even if the complaint does not specify an exact amount. As to costs incurred before the complaint was filed, prejudgment interest, as calculated per the formula in 42 U.S.C.S. § 9607(a)(4), should be assessed from the date the complaint was filed. With respect to costs, if any, incurred after the complaint was filed, prejudgment interest should be assessed from the date of the expenditures.

COUNSEL: [*1] For HORSEHEAD INDUSTRIES, INC., plaintiff: Michael D Graves, Susan L Gates, Hall Estill Hardwick Gable, Golden & Nelson, Tulsa, OK. Kenneth N McKinney, Mark D Coldiron, Robert Leslie Roark, Connie Mae Bryan, McKinney & Stringer PC, Oklahoma City, OK. Laurence A Silverman, Robert M Hallman, Cahill Gordon & Reindel, New York, NY.

For ST JOE MINERALS CORPORATION, FLUOR CORPORATION, plaintiffs: Michael D Graves, Susan L Gates, Hall Estill Hardwick Gable, Golden & Nelson, Tulsa, OK. William C Anderson, Russell Wayne Kroll, Linda C Martin, Doerner Saunders Daniel & Anderson, Tulsa, OK. Laurence A Silverman, Robert M Hallman, Richard C Schoenstein, Cahill Gordon & Reindel, New York, NY.



LEXSEE 87 KAN. 376

F. B. VANDEGRIFT & COMPANY, Appellees, v. THE LANYON ZINC COMPANY et al., Appellants.

No. 17,662.

SUPREME COURT OF KANSAS

87 Kan. 376; 124 P. 534; 1912 Kan. LEXIS 152

January, 1912, Decided
June 8, 1912, Filed

PRIOR HISTORY: [***1] Appeal from Allen district court. Opinion filed June 8, 1912. Affirmed.

DISPOSITION: Judgment affirmed.

SYLLABUS

SYLLABUS BY THE COURT.

CONTRACT--Customhouse Brokers--Contingent Fee--Recovery. Under the facts stated in the opinion a contract by a firm of customhouse brokers with a smelting company to procure, at their own expense, for a compensation of fifty per cent of the amount collected, the refunding of excess duties exacted by revenue officers on importations of lead and zinc ore, is held to be neither champertous nor unconscionable; and it is further held that the brokers are entitled in equity to be paid their portion of a sum refunded by the government through their efforts under the contract, out of a treasury warrant for such sum issued to the smelting company and delivered to its receiver, although, under the circumstances, the ores were in fact owned and the duties paid by another corporation.

COUNSEL: Altes H. Campbell, and John F. Goshorn, for the appellants.

E. W. Myler, Charles H. Apt, and Frederick G. Apt, for the appellees.

JUDGES: BURCH, J.

OPINION BY: BURCH

OPINION

[**535] [376] The opinion of the court was delivered by

BURCH, J.: The Lanyon Zinc Company, owning smelters [***2] at Iola and La Harpe, smelted imported lead and zinc ore for itself and others. Ultimately it confined its operations to treating ores for the American Metal Company on a toll basis. Shipments of these ores were consigned to the zinc company, which maintained a bonded warehouse at its plant. The ores were inspected there and then released. Assays were then made, the amount of the duty determined, and the zinc company notified. It immediately paid the duty, and drew a sight draft on the metal company for the amount.

[*377] In the conduct of this business illegal duties were charged and collected by the revenue officials, which the zinc company protested in its own name and which it undertook to recover from the government. To this end it employed the plaintiffs, a firm of customhouse brokers, under a contract which reads as follows:

"We hereby employ F. B. Vandegrift & Co. to recover and collect any excessive custom duties, penalties and charges heretofore or hereafter, charged to or paid by us, or for our account, on all importations of zinc ores, etc., by us or for our account, and agree to pay said F. B. Vandegrift & Co., fifty per cent of such recoveries. We are not to be [***3] liable for any expenses or charges incurred by F. B. Vandegrift & Co., in the premises, and F. B. Vandegrift & Co. are not to be liable for failure to file protests, except where they receive actual notice of liquidation of an entry in reasonable time to file the protest thereon, and are not to be liable otherwise except for failure to exercise reasonable care and diligence in the premises."

87 Kan. 376, *; 124 P. 534, **;
1912 Kan. LEXIS 152, ***

Under this contract the plaintiffs secured the return to the zinc company of large sums of excessive duties. The services performed were of a special and peculiar character, requiring a technical knowledge of chemistry, metallurgy and assaying, an intimate knowledge of the classification of articles of import, and technical knowledge and experience in the procedure necessary under the revenue laws and department regulations to procure refunds of this character. The plaintiffs attended inspections, prepared and filed proper protests, conducted contests, and prepared and conducted cases before the board of general appraisers at New York. They employed attorneys who finally succeeded in arranging a test case, involving the principal matters of dispute between the government and the zinc company, [***4] which was decided in favor of the zinc company by a federal court in Texas. After that the plaintiffs followed up protests by showing to the board of general appraisers that the duties protested were governed by [*378] the test case. The terms of the contract were those usual in the customs brokerage business.

In April, 1909, defendant Rogers was appointed receiver of the zinc company. A government warrant was issued in favor of the zinc company for the sum of \$22,533.18, protested duties refunded through the efforts of the plaintiffs. This warrant was received by Rogers, and was immediately indorsed and delivered by him to the American Metal Company. The plaintiffs sued the zinc company and the receiver for their share, one-half, of this sum and recovered. As a part of the judgment the receiver was ordered to pay into court for the use of the plaintiffs out of the amount of the warrant the sum of \$11,266.69 and the costs of the suit. The receiver and the zinc company appeal.

It is argued that the contract is champertous. Champerty involves the prosecution or maintenance by one party at his own expense of the suit of another for a share of the anticipated judgment. (*A. T. [***5] & S. F. Rld. Co. v. Johnson*, 29 Kan. 218, 227.) It is not essential that an action be pending when the contract is made but litigation must be contemplated. (6 Cyc. 852.) Champerty as thus defined by the common law is fully recognized in this state. (*Moreland v. Devenney*, 72 Kan. 471, 83 P. 1097, and cases cited in the opinion.) The doctrine, however, has not been extended; and in view of the fact that the reasons by which it was formerly supported have lost much of their force through the progress of society it ought not to be extended. Agreements to pay contingent fees for services rendered in securing by moral methods the allowance of claims of a legitimate character by the executive departments of the government or commissioners appointed to examine claims have never been regarded as champertous, and this is true even where the contingent fee also covers expenses incurred in the

prosecution of the claim. (*Manning v. Sprague*, 148 Mass. 18, 18 N.E. 673, 12 Am. St. Rep. 508, 1 L. R. A. 516.)

[*379] In the case just cited an agreement was held to be valid and enforceable by which an attorney was to receive a percentage of the amount recovered for his services and expenses [***6] in the prosecution of a claim before the court of Commissioners of Alabama Claims. The court said:

"Neither the definition of champerty nor the reasons why it was held to be an offence have any proper application to a proceeding such as that by which the defendant, under his contract with the plaintiff, sought to enforce his claim against the government of the United States. There was no suit to be brought, nor any defendant in the proposed proceeding in the same sense that there is in a contested cause at law or in equity. . . . The proceeding before this tribunal was an inquest, as distinguished from a trial or a lawsuit." (pp. 20, 21.)

Likewise in this case [**536] the business fell entirely outside the ordinary course of legal procedure. The test case by which the proper application of the revenue laws to the importations in question was finally settled was a mere incident growing out of the plaintiff's employment, an expedient adopted by them and not a substantive part of the contract which the parties had in contemplation when it was made.

It is argued that the contract was unconscionable. The case of *Taylor v. Bemiss*, 110 U.S. 42, 28 L. Ed. 64, 3 S. Ct. 441, involved [***7] a contingent fee for the prosecution of a claim before the Southern Claims Commission. The court said:

"It was decided in the case *Stanton v. Embrey*, 93 U.S. 548, 23 L. Ed. 983, that contracts by attorneys for compensation in prosecuting claims against the United States were not void because the amount of it was made contingent upon success, or upon the sum recovered. And the well-known difficulties and delays in obtaining payment of just claims which are not within the ordinary course of procedure of the auditing officers of the government, justifies a liberal compensation in successful cases, where none is to be received in case of failure. Any other rule would work much hardship in cases of creditors of small means residing far from the seat of government, [*380] who can give neither money nor personal attention to securing their rights. . . . While fifty per cent seems to be more than a fair proportion in the division between client and attorney in an ordinary case, we are not prepared to assume that it is extortionate for that reason alone, and the testimony of the lawyers on that subject, taken as experts, does not justify such a conclusion." (pp. 45, 46.)

87 Kan. 376, *; 124 P. 534, **;
1912 Kan. LEXIS 152, ***

In the present [***8] instance the services performed were not in any sense those of an attorney in an ordinary case, and the evidence shows the compensation agreed upon was that which was generally recognized as proper. There is no suggestion that fraud was practiced or any undue advantage taken.

The defendants seem to think they should not be liable because the ore in fact belonged to the metal company and because that company ultimately paid the duty which was refunded. Under the revenue law the zinc company was deemed and held to be the owner of the property. (26 U.S. Stat. at L., p. 131.) Neither the government nor the plaintiffs knew the metal company, and it is not material to this controversy what the arrangements were between that company and the zinc company. The plaintiffs executed their contract with the zinc company and are entitled to their compensation.

It is claimed that the court erred in ordering the judgment paid out of the warrant which the receiver received. The metal company having entrusted the collection of excess duties on its ores to the zinc company, the zinc company had a legitimate claim on the fund for the expenses incurred and it was the duty of the receiver to account to [***9] the court for the warrant and obtain an order for the disposition of the money in the regular way. He could not arbitrarily divest himself of the fund. It should be regarded as still in his possession, and the plaintiffs were entitled in equity to a lien upon it for their share.

Some complaint is made by both parties respecting [*381] the admission of evidence but the court is unable to say that the merits of the case were affected in any substantial way by the rulings made.

The judgment of the district court is affirmed.

10921B

Time of Request: Monday, July 27, 2009 11:59:24 EST

Client ID/Project Name:

Number of Lines: 979

Job Number: 1843:169189380

Research Information

Service: Terms and Connectors Search

Print Request: Current Document: 1

Source: EPA Administrative Materials Combined

Search Terms: cyprus amax and american metal

Send to: N/L, 1002MN
EPA ORC REGION VII KANSAS CITY
901 N 5TH ST
KANSAS CITY, KS 66101-2907



1 of 1 DOCUMENT

In re: Cyprus Amax Minerals Company Petitioner

CERCLA § 106(b) Petition No. 96-2

United States Environmental Protection Agency
Environmental Appeals Board

1997 EPA App. LEXIS 31; 7 E.A.D. 434

December 23, 1997

CORE TERMS: soil, cleanup, removal, ppm, cadmium, contamination, site, reimbursement, blood, administrative record, endangerment, phase, remedial action, imminent, remedial, elevated, acted arbitrarily, concentration, residential, smelting, contaminated, memorandum, sampling, arbitrary and capricious, smelter, selecting, public health, capriciously, high-access, correlation

HEADNOTE:

[*1]

1. Pursuant to CERCLA section 106(b), 42 U.S.C. § 9606(b), Cyprus Amax Minerals Company ("Cyprus Amax") petitioned for reimbursement of costs associated with its compliance with a unilateral administrative order ("UAO") issued under CERCLA section 106(a), 42 U.S.C. § 9606(a). The UAO, issued by U.S. EPA Region VI on February 2, 1994, required Cyprus Amax to remove soil that had become contaminated with lead and cadmium as a result of various smelting operations in Bartlesville, Oklahoma, between 1907 and 1993. Cyprus Amax is the corporate successor to the parent company of two companies that conducted smelting operations at the facility involved here, the National Zinc Company ("NZC") facility in Bartlesville.

2. In a series of phases, the concentrations of lead and cadmium in the soil were assessed, as was the extent of lead contamination in the blood of children residing within close proximity to the NZC facility. The second phase involved soil samples from "high access" areas where children tend to congregate. As a result of this phase of the testing, the Region performed a removal action at the "high access" areas by removing the lead- and/or cadmium-contaminated soil from those [*2] areas. The third phase of the testing focused on residential areas, and identified approximately 1200 residences near the NZC facility that had elevated lead or cadmium contamination in the soil. Blood lead testing revealed that 13.8% of children tested who lived near the facility had elevated blood lead levels. Based on these results, the Region found an apparent strong correlation between locations of elevated lead concentrations in residential soil and locations of children with elevated blood lead levels.

3. In September 1993, the Region executed an Action Memorandum ("September 1993 Action Memorandum") providing for a removal action involving the excavation and replacement of the lead and cadmium contaminated soil at the 1200 residences where concentrations of those pollutants were greater than three times the established cleanup levels. The established cleanup level for lead was 500 ppm, based upon then-available Agency guidance. Agency guidance at that time recommended that cleanup levels for lead-contaminated soil be in the range of 500 ppm to 1000 ppm. The established cleanup level for cadmium was 30 ppm, based upon the recommendations of the Agency for Toxic Substances [*3] and Disease Registry ("ATSDR").

4. At the time of the September 1993 Action Memorandum, the site was also the subject of a remedial investigation, and the process of selecting a remedy was under way. In the September 1993 Action Memorandum, the Region explained that it was anticipated, although not certain, that before the soil was excavated and replaced at all 1200 residences, the remedial program would assume responsibility for completing the task.

5. Ultimately, the removal action required by the UAO was subsumed in the remedial action for the site. The remedial action adopted less stringent soil cleanup levels of 925 ppm for lead and 100 ppm for cadmium.

6. Before filing the reimbursement petition, Cyprus Amax defended itself in a federal court action brought by other parties potentially responsible for cleaning up contamination at the NZC site. The federal court found Cyprus Amax liable as an operator at the site, and as a generator of the contamination, based upon Cyprus Amax's status as the corporate successor to two companies that conducted smelting operations at the facility. Cyprus Amax did not appeal that decision.

7. In its petition, Cyprus Amax claims that it is entitled [*4] to reimbursement because it is not liable. In addition, Cyprus Amax claims that the Region acted arbitrarily and capriciously in issuing the UAO, because there was no "imminent and substantial endangerment." Further, Cyprus Amax contends that the Region's selection of cleanup levels and the requirement to clean whole yards rather than "hot spots" were arbitrary and capricious.

8. Held: The petition for reimbursement is denied.

9. Cyprus Amax's liability claim, made as a protective measure in the event Cyprus Amax appealed the federal court decision, is denied, as Cyprus Amax did not file such an appeal. In its comments on the Preliminary Decision, Cyprus Amax did not contest the Board's finding of liability.

10. There was an imminent and substantial endangerment justifying the issuance of the UAO. Given the risks posed by lead or cadmium contamination, and the apparent strong correlation between high blood lead levels in children and high levels of soil contamination near the NZC facility, an imminent and substantial endangerment was presented by the elevated levels of soil contamination at the 1200 residences. The fact that the Region had previously removed soil from the high [*5] access areas does not negate the endangerment presented by the contaminated soil at the 1200 residences.

11. Nor does the fact that the site was in the remedy selection process negate the endangerment. There is no merit to Cyprus Amax's contention that the Region should have ordered this cleanup solely through the remedial process, not the removal process. The Region evaluated the risks presented by delaying soil cleanup until the remedy was selected, and decided that in light of those risks it would begin addressing soil contamination immediately, through a removal action, rather than delaying such work until the remedial action commenced. At the time the removal was selected, there was no certainty as to the time of the anticipated remedial activity. Further, it was not certain that the remedial action would address the urgency of the human health threat as did the removal action.

12. The 500 ppm cleanup level for lead was based upon then-available Agency guidance, and was not arbitrarily selected. The guidance recommended a cleanup level in the range of 500 to 1000 ppm. The Region then considered the Agency guidance indicating that if the UBK model were used without site-specific [*6] data, as was the case here, it would produce a cleanup level of 500 ppm. In addition, the Region considered the strong correlation between the locations of elevated soil lead concentrations and children with elevated blood lead levels in deciding to choose the low end of the range recommended by Agency guidance. Particularly in light of that correlation, the Region's selection of 500 ppm was not unreasonable. The fact that a less stringent cleanup level was selected for the remedial action does not demonstrate that the Region acted arbitrarily. The Region did not have the benefit of a completed remedy selection when it selected the removal, and in light of the information available to the Region at the time it selected the removal action, the Region's decision was not arbitrary and capricious.

13. The 30 ppm cleanup level for cadmium was based upon consultations with the ATSDR. The fact that a less stringent cleanup level was selected for the remedial action does not demonstrate that the Region acted arbitrarily. The Region did not have the benefit of a completed remedy selection when it selected the removal, and in light of the information available to the Region at the time it [*7] selected the removal action, the Region's decision was not arbitrary and capricious. A document upon which Cyprus Amax relies to show that the 30 ppm level was arbitrary is not in the administrative record, and in any event, is not persuasive.

14. The Region did not act arbitrarily in ordering Cyprus Amax to remove the soil from an entire yard rather than just the "hot spots." Given that the soil contamination resulted from air disposition from uncontrolled stack emissions at the smelters, and given the widespread contamination within a close proximity to the NZC facility, the Region acted reasonably, and Cyprus Amax has not pointed to any evidence in the administrative record suggesting that the Region acted arbitrarily.

15. NOTICE: This opinion is subject to formal revision before publication in the Environmental Administrative Decisions (E.A.D.). Readers are requested to notify the Environmental Appeals Board, U.S. Environmental Protection

Agency, Washington, D.C. 20460, of any typographical or other formal errors, in order that corrections may be made before publication.

PANEL:

*Before Environmental Appeals Judges Ronald L. McCallum, Edward E. Reich and Kathie A. Stein; Opinion [*8] of the Board by Judge Reich*

OPINION:

FINAL DECISION

Cyprus Amax Minerals Company has filed a petition for reimbursement of response costs under section 106(b) of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), 42 U.S.C. § 9606(b). This petition arises out of a removal action taken to address lead- and cadmium-contaminated soil that resulted from various smelting operations that occurred in Bartlesville, Oklahoma from 1907 to 1993. Cyprus Amax is the corporate successor to the parent company of two companies that conducted smelting operations at the facility involved here. On February 2, 1994, U.S. EPA Region VI issued to Cyprus Amax a unilateral administrative order ("UAO") under CERCLA section 106(a), 42 U.S.C. § 9606(a), directing Cyprus Amax to remove lead- and cadmium-contaminated soil from approximately 1200 residences near the smelting facility.

By this petition, Cyprus Amax seeks to recover \$ 6,274,929.95 it asserts that it spent in complying with the UAO. Cyprus Amax claims it is entitled to reimbursement because it is not liable for cleaning up the contamination and because [*9] the Region arbitrarily and capriciously selected the response action ordered by the UAO. The Region responded to the petition. Based on those submissions, the Board issued a Preliminary Decision on September 23, 1997. In the Preliminary Decision, the Board indicated that the claim for reimbursement must be denied in all respects.

Cyprus Amax filed comments on the Preliminary Decision on October 27, 1997, and the Region filed comments on November 17, 1997. n1 After due consideration of the comments received and making such changes as are appropriate, the Board issues this Final Decision denying reimbursement. *See Guidance on Procedures for Submitting CERCLA Section 106(b) Reimbursement Petitions and on EPA Review of Those Petitions* ("1996 Guidance") at 9-10 (Oct. 9, 1996).

n1 The Region also filed a motion to strike several issues raised in Cyprus Amax's comments on the Preliminary Decision on the ground that those issues were raised for the first time in the comments. Cyprus Amax opposed the motion. The Region's motion is hereby denied. The arguments made by the Region in its motion to strike are more appropriately considered when determining what weight, if any, to give to any such comments by Cyprus Amax.

[*10]

I. BACKGROUND

In 1907, three smelters began operating on the western edge of Bartlesville, a municipality in northeastern Oklahoma with a population of approximately 46,000. Memorandum from Toxicologist, Agency for Toxic Substances and Disease Registry (ATSDR), to Carl R. Hickam, ATSDR Representative, Region VI at 1 (July 16, 1991) ("July 1991 Health Consultation"). One was owned by the National Zinc Company (NZC). The NZC smelter was purchased in 1987 by the Zinc Corporation of America (ZCA). The other two smelting companies, Lanyon-Starr Smelting Company and Bartlesville Zinc Company, ceased operations in the 1920s. July 1991 Health Consultation at 1. Cyprus Amax is the corporate successor to American Metal Company, Limited, which was the parent corporation of Lanyon-Starr Smelting Company and Bartlesville Zinc Company. The areas formerly occupied by the Lanyon-Starr Smelting Company, Bartlesville Zinc Company and NZC smelters are currently part of the facility owned by ZCA, which the parties refer to as the "NZC facility." *Id.* n2

n2 Despite the fact that ZCA is the most recent owner of the smelting facility, the parties have referred to the facility by the initials of the previous owner, National Zinc Company. We will use the same appellation as the parties, and refer to the smelting facility as the "NZC facility."

[*11]

Since commencing operations in 1907, the primary function of the NZC facility has been the recovery of zinc, cadmium and lead from industrial materials. July 1991 Health Consultation at 1. Originally, the NZC facility used a horizontal retort furnace for its smelting operations. The smelting process generated significant quantities of particulate air emissions, including lead and cadmium. ATSDR Public Health Statement: Lead at 2; ATSDR Public Health Statement: Cadmium at 1-2. n3 Between 1907 and 1969, the NZC facility reportedly emitted an average of approximately 1600 tons per year of particulate matter (or an estimated total of 99,200 tons during those years). Memorandum from Anan I. Tanbouz, Region VI Technical Assistance Team, to Pat Hammack, On-Scene Coordinator, Region VI Emergency Response Branch, at 2 (May 15, 1992) ("Phase II Report"). In 1976, the emissions were reduced by 99%, to a rate of approximately 15 tons per year, by the installation of an electrolytic refinery to replace the horizontal retort furnace. *Id.* n4 Because of this change, it is likely that most of the lead and cadmium found in the soils in Bartlesville resulted from the uncontrolled emissions of particulate [*12] matter, and not from recent operations. n5 Bartlesville Lead/Cadmium Project Phase II Results Summary at 2 ("Phase II Results Summary"). n6

n3 These undated documents can be found in the administrative record at pp. 000307 and 000313, respectively.

n4 Between 1969 and 1976, NZC installed a sulfuric acid plant and increased the height of the emission stack. The record is not clear with respect to the effect, if any, of these measures on NZC's emissions.

n5 Smelting produces a by-product called "slag." *See In re A&W Smelters and Refiners, Inc.*, CERCLA § 106(b) Petition Nos. 94-14 and 94-15, slip op. at 4 n.2 (EAB, Mar. 11, 1996), 6 E.A.D. . . Slag may contain the same hazardous substances that are released into the air from the smelting process. Slag from NZC's smelting operations was often used throughout Bartlesville as fill dirt. Record of Communication from Doug Holy, Region VI, to Mark Coleman, Oklahoma Department of Health (June 27, 1983). Thus, a possible secondary source of lead and cadmium contamination in the soil was the use of slag as fill dirt.

n6 This undated document can be found in the administrative record at p. 000009.

[*13]

From the late 1970's through the early 1980's, Bartlesville was included in several studies examining the extent of metals contamination in communities near smelters. In 1975, researchers studied lead and cadmium levels in the hair and blood of children living near smelters. Children in Bartlesville had the highest mean blood cadmium, hair cadmium, and blood lead levels encountered in the study. July 1991 Health Consultation at 4-5.

A 1981 EPA Health Effects Research Lab report confirmed elevated levels of blood lead in children in Bartlesville. Memorandum from Pat Hammack, On-Scene Coordinator, Region VI, to Emergency Response Branch, Region VI at 2 (Nov. 14, 1991) ("Nov. 14, 1991 Memorandum"). n7 This report showed the tendency for higher levels of lead in blood to correlate to higher levels of lead in the surface soil. *Id.*

n7 The 1981 report is not in the administrative record. The 1981 study, however, is summarized in the Nov. 14, 1991 Memorandum, which is in the record.

The recent history of the efforts [*14] to clean up the lead and cadmium contamination in Bartlesville, culminating in the UAO underlying the petition for reimbursement in this matter, begins in 1991. In July 1991, the ATSDR issued a health consultation n8 based upon its review of the information then available about the contamination in Bartlesville--much of that information being ten years old in 1991. The ATSDR explained that the primary route of human exposure to lead and cadmium in the soil was through inhalation or ingestion, particularly by young children who engage in hand-to-mouth activities. July 1991 Health Consultation at 9. Noting that children are more sensitive to lead than adults, the ATSDR explained the toxic effects of lead, including decreased intelligence scores and slow growth. The ATSDR also noted the risks to pregnant women, including premature birth, low birth rate and miscarriage. Regarding cadmium, the ATSDR referred to studies suggesting that the inhalation of cadmium can result in increased risk of lung cancer. *Id.* at 9-10. The ATSDR concluded that the concentrations of lead and cadmium found at schools and residential areas in the

late 1970s and early 1980s were health concerns. If such [*15] contamination continued to exist in 1991, it would still be of concern. *Id.* at 11.

n8 The ATSDR was established by CERCLA section 104(i), 42 U.S.C. § 9604(i). It is charged with effectuating and implementing the health-related authorities of CERCLA. CERCLA § 104(i)(1). As part of its duties, it "shall provide consultations upon request on health issues relating to exposure to hazardous or toxic substances." CERCLA § 104(i)(4). While ATSDR often provides such consultations to EPA upon request, in this case, ATSDR was responding to a request from the State of Oklahoma.

The ATSDR concluded, however, that while exposure to metals may still be occurring beyond the boundaries of the NZC facility, there was, in 1991, insufficient information available to evaluate the extent of the current health threat, if any. *Id.* Consequently the ATSDR recommended that biomedical testing be conducted to determine the extent of any human exposure to lead and cadmium, and that environmental testing [*16] be done to characterize the extent of any soil contamination. *Id.* at 12.

In November 1991, the Region VI Emergency Response Branch began its assessment of the contamination outside the NZC facility. Nov. 14, 1991 Memorandum at 2. This assessment was conducted in three phases. *Id.* The first phase consisted of sampling within a three-mile radius of the NZC facility n9 for the purpose of establishing background lead concentration levels. The second phase consisted of sampling at "high-access areas," that is, areas where children tend to congregate, such as schools, parks, day care centers, etc. The third phase consisted of sampling at other households and private property (that is, households and private property that were not "high-access areas"). *Id.*

n9 It is not clear from the various submissions to this Board if the radius extends from the actual center of the facility or from its boundaries.

The Phase I sampling was completed in December 1991. Memorandum from Pat Hammack, On-Scene Coordinator, Region [*17] VI, to Emergency Response Branch, Region VI (Dec. 5, 1991). During this phase, the Emergency Response Branch analyzed 44 soil samples. Bartlesville Lead Project Interim Report at 2. n10 Soil from six of the samples contained lead at levels higher than 500 mg/kg. *Id.* at 4. Nine of the samples contained cadmium at levels greater than 30 mg/kg. *Id.* These fifteen samples contained levels of lead and cadmium above the cleanup levels ultimately adopted in this case for lead and cadmium in residential soils. The Phase I data revealed lead concentrations as high as 1800 ppm and cadmium concentrations as high as 198 ppm. Phase II Report at 4.

n10 This undated document can be found in the administrative record at p. 000266.

Following the Phase I sampling results, in March 1992, the Region established cleanup levels n11 for lead and cadmium soil contamination in Bartlesville. Based upon then-current Agency "removal guidelines," the Region established a 500 ppm cleanup level for lead contaminated soil in residential areas. [*18] n12 Memorandum from Pat Hammack, On-Scene Coordinator, Region VI, to George Pettigrew, ATSDR (Mar. 1992). Based upon discussions with ATSDR, the Region set the cadmium cleanup level at 30 ppm for soil in residential areas. *Id.* On May 12, 1992, the ATSDR formally indicated its assessment that a cleanup level of 30 ppm for cadmium in residential soils in Bartlesville is adequately protective of human health. ATSDR Record of Activity (May 12, 1992).

n11 We are using the term "cleanup level" here even though the administrative record indicates that the Region established "action levels." Our reasoning is that the UAO underlying this petition for reimbursement requires soil to be removed whenever lead or cadmium contamination exceed levels of 1500 ppm or 90 ppm, respectively, until levels of 500 ppm or 30 ppm, respectively, were reached. The Region agrees with Cyprus Amax that "the 'cleanup level' is the concentration level which the removal response action was to achieve in residential areas where an 'action level' for cadmium or lead was found." Response to Petition at 34 n.11. Using the terminology agreed to by the parties, the 500 ppm and 30 ppm levels for lead and cadmium, respectively, are cleanup, not action, levels.

[*19]

n12 The Region also based its selection of a 500 ppm cleanup level for lead on actions then being taken at a site in Dallas, Texas. Because the Region later dropped this basis for its selection, *see* Action Memorandum from Russell F. Rhoades, Director, Region VI Environmental Services Division, to Don R. Clay, Assistant Administrator, Office of Solid Waste and Emergency Response at 2 (July 10, 1992), it warrants no discussion here.

Phase II of the soil sampling was completed in March 1992. During this phase, 458 samples were taken from 54 "high-access" areas for children, all of which were within a three-mile radius around the NZC facility. Phase II Results Summary at 1. Twenty-nine of these high-access areas had at least one sample above EPA cleanup levels for lead and/or cadmium. *Id.* The results of this sampling also showed that generally, the concentrations of lead and cadmium in the soil decreased as distance from the NZC facility increased, *Id.* at 2.

Based upon the Phase II results, on July 10, 1992, the Region executed an action memorandum memorializing its selection of a removal [*20] action it would conduct with respect to the high-access areas tested in Phase II. n13 Action Memorandum from Russell F. Rhoades, Director, Region VI Environmental Services Division, to Don R. Clay, Assistant Administrator, Office of Solid Waste and Emergency Response at 2 (July 10, 1992) ("July 1992 Action Memorandum"). In particular, the July 1992 Action Memorandum indicated that the removal action would focus on the 29 high-access areas where at least one soil sample indicated cadmium or lead concentrations above the cleanup levels of 30 ppm and 500 ppm, respectively. July 1992 Action Memorandum at 3. The action memorandum provided that the removal action would use the same cleanup levels for lead and cadmium adopted by the Region at the end of Phase I. The Region stated that the 500 ppm lead cleanup level was derived from "current removal guidance" and the 30 ppm cadmium cleanup level was derived from an ATSDR health consultation. *Id.* at 2. Noting that lead is a highly toxic metal, n14 and that cadmium is a "probable carcinogen," n15 the Region explained that the soil contaminated in excess of the cleanup levels threatened public health and welfare in that children who frequented [*21] these high-access areas could be exposed to lead and cadmium through inhalation or ingestion of the soil. *Id.* at 4. To eliminate this threat, the July 1992 Action Memorandum selected a removal action requiring the excavation and restoration of contaminated soil in the 29 high-access areas where sampling showed lead contamination in excess of 500 ppm or cadmium contamination greater than 30 ppm. *Id.* at 6.

n13 Removal actions are defined at CERCLA section 101(23), 42 U.S.C. § 9601(23). "The removal program is intended to address releases that pose a relatively near-term threat," 53 Fed. Reg. 51,394, 51,405 (Dec. 21, 1988), and the authority to conduct removal actions "is mainly used to respond to emergency and time-critical situations where long deliberation prior to response is not feasible." 55 Fed. Reg. 8,666, 8,695 (Mar. 8, 1990). "Removals are distinct from remedial actions in that they may mitigate or stabilize the threat rather than comprehensively address all threats at a site." *Id.* CERCLA defines a "remedial action" as an action "consistent with [a] permanent remedy taken instead of or in addition to removal actions." 42 U.S.C. § 9601(24). *See also In re T H Agriculture & Nutrition Company, Inc.*, CERCLA § 106(b) Petition No. 94-20, slip op. at 5 (EAB, Sept. 5, 1996), 6 E.A.D. . Consequently, the selection of the response action for a remedial action usually takes longer than for a removal action, and involves more Agency deliberation and public participation. *Id.* at 6 (citing 53 Fed. Reg. 51,394, 51,463 (Dec. 21, 1988)).

[*22]

n14 In particular, the Region explained that:

Lead is a highly toxic metal, producing a range of adverse human health and environmental effects, particularly in children and fetuses. These adverse effects include reproductive system disorders, delays in neurological and physical development, cognitive and behavioral changes, and increased blood pressure.

July 1992 Action Memorandum at 5.

n15 See July 1991 Health Consultation at 10 ("Studies in humans also suggest that long-term inhalation of cadmium can result in an increased risk of lung cancer.").

The July 1992 Action Memorandum also identified a "second area of concern" that was not addressed by the removal action selected in that memorandum. The "second area of concern" was described as residences where "there is demonstrated elevation of blood lead, and where leaded paint is not a significant influence." *Id.* at 7. Because the data for those residential soils were incomplete at that time, the July 1992 Action Memorandum contemplated a follow-up removal action for those residences at a later date. *Id.* n16

n16 Under section 104(c) of CERCLA, federal removal actions cannot exceed \$ 2 million or take more than one year to complete unless the removal action is "otherwise appropriate and consistent with the remedial action to be taken." The cost of the removal contemplated in the July 10 Action Memorandum was in excess of \$ 5 million. Accordingly, the Region asked EPA headquarters for, and received, a waiver from the \$ 2 million limit on the ground that the removal action was appropriate and consistent with potential remedial action. July 1992 Action Memorandum at 6. The Region also asked for, and received, an exception to the one-year time limitation. Action Memorandum from Pat Hammack, On-Scene Coordinator, Region VI, to Joe Winkle, Acting Regional Administrator at 1 (Sept. 10, 1993) ("September 1993 Action Memorandum").

[*23]

As noted previously, the Region conducted the removal action for the 29 high-access areas with lead in soil levels in excess of 500 ppm or cadmium in soil levels in excess of 30 ppm. It also appears that the Region conducted a removal action with respect to the "second area of concern," that is, the residences where children with elevated blood levels resided and where surface soils contained elevated lead or cadmium levels, although the administrative record is quite sparse with respect to this action. n17

n17 There is no action memorandum in the administrative record specific to the removal action for the "second area of concern." The Region appears to have conducted the removal under the July 1992 Action Memorandum, even though that memorandum stated that "because sufficient information is unavailable, [the second area of concern] is currently outside the scope of the proposed removal action," and "should this 'area of concern' develop significantly, additional requests reflecting the change in scope of the proposal will be submitted for approval." July 1992 Action Memorandum at 7.

[*24]

While the removal actions were in progress, Phase III of the soil sampling proceeded. Memorandum from Anan Hammad, Region VI Technical Assistance Team, to Pat Hammack, On-Scene Coordinator, Region VI at 3 (May 17, 1993) ("Phase III Report"). The Phase III sampling was conducted at residences near the NZC facility. During this phase, 2335 soil samples were obtained. *Id.* at 4. In May 1993, a report on Phase III was issued. Although the report does not contain a narrative summary of the results, the Region represents here that the Phase III sampling revealed approximately 1200 residences within a three-kilometer (approximately 1.86 mile) radius of the NZC facility that had soil samples containing lead and/or cadmium contamination at levels three times greater than the established cleanup levels -- that is, lead contamination greater than 1500 ppm or cadmium contamination greater than 90 ppm. Action Memorandum from Pat Hammack, On-Scene Coordinator, Region VI, to Joe Winkle, Acting Regional Administrator at 4 (Sept. 10, 1993) ("September 1993 Action Memorandum"). Cyprus Amax has not challenged this conclusion in these proceedings.

While each phase of the soil sampling was in progress, [*25] the State of Oklahoma, in conjunction with the ATSDR, conducted biomedical testing, that is, blood testing, on children in Bartlesville. The results of these tests are summarized in the administrative record, and in particular in the September 1993 Action Memorandum. A total of 365 children between the ages of six months and six years were tested. Of these, 246 children lived within three kilometers of the NZC facility. And of these, 34 children, or 13.8%, had blood lead levels greater than 10 [mu] g/dl. n18 Of the 119 children tested who lived more than three kilometers away from the NZC facility, none had blood lead levels greater than 10 [mu] g/dl. September 1993 Action Memorandum at 7.

n18 Since 1991, the Centers for Disease Control has considered 10 [mu] g/dl to be the lowest level of lead contamination in blood at which adverse health effects can be identified. According to the CDC, blood lead levels greater than 10 [mu] g/dl may warrant community intervention, including environmental measures.

The results [*26] from the Phase III soil sampling and the biomedical testing led the Region to conclude that further removal action was warranted. Referencing the harmful health effects from exposure to lead and/or cadmium, the Region determined that lead- and cadmium-contaminated soil should be removed from the approximately 1200 residences located within a three-kilometer radius of the NZC facility, where Phase III sampling indicated soil concentrations of lead greater than 1500 ppm or of cadmium greater than 90 ppm. September 1993 Action Memorandum at 1, 2 (hereinafter, the area encompassing these residences shall be referred to as "the Site"). The Region noted that the area encompassed by this planned removal action was "the general location of elevated blood lead levels in approximately 14% of the test population of children aged 6 to 72 months." *Id.* at 2. Citing recent soil and biomedical testing, the Region concluded that "it appears that there is a very strong correlation between the locations of elevated surface soil lead concentrations and the locations of the residences of children with elevated blood levels." *Id.* at 8. According to the Region, this planned removal action "addresses [*27] the area which presents the greatest potential heavy metal exposure to the residents." *Id.* at 3.

According to the Region, this planned removal would be an extension of the removal selected by the July 1992 Action Memorandum, and therefore it requested a further extension of the statutory limits applicable to removal actions. n19 In order to obtain this extension, the selected removal action needed to be consistent with the long-term remedial action anticipated for the Site. n20 In September 1993, the Region "anticipated that the work described in this memorandum would be similar to that which would be conducted by the remedial program" for the Site. September 1993 Action Memorandum at 10. Indeed, it was anticipated, although not certain, that before the removal action was complete, *i.e.*, before the soil was excavated and replaced at all of the 1200 residences, the remedial program would assume responsibility for completing the job. *Id.* at 10, 13. In September 1993, the process of selecting a remedy for the Site was under way, under the direction of the State of Oklahoma. n21

n19 See n. 16 *supra* (because CERCLA § 104(c) limits federal removal actions to \$ 2 million in cost and one year in time, the activities recommended by the July 1992 Action Memorandum required an exception from those limitations).

[*28]

n20 See n. 16 *supra*.

n21 The Agency and the State of Oklahoma executed an agreement for the State's Department of Environmental Quality to conduct a pilot project to complete a "CERCLA-quality" investigation and remediation of the Site under State authority. Record of Decision for Operable Unit One of the National Zinc Site at 2 (Oklahoma Department of Environmental Quality, Dec. 13, 1994).

Five months after the September 1993 Action Memorandum was signed, the Region issued a UAO on February 2, 1994, directing Cyprus Amax and others to conduct the removal action selected in the September 1993 Action Memorandum. In particular, the order required the removal of soil contaminated with lead in excess of 1500 ppm or cadmium in excess of 90 ppm at residences within a three-mile radius of the NZC facility. n22 The order states that "excavation will continue until the metal concentration of the surface soil is reduced below 500 ppm lead and 30 ppm cadmium, but only to a maximum depth of two feet." UAO at 16. The recipients of the UAO were ordered to backfill excavated areas with clean soil. [*29] The UAO provided that the removal action "shall be conducted * * * for a total of two years unless the scope of the Removal Action is completed in less than two years, or the activities required by this Order are being conducted as part of the Remedial Action" ultimately ordered by the State of Oklahoma. UAO at 17.

n22 The Phase III testing and the September 1993 Action Memorandum detail the need for a removal within a three-kilometer radius of the NZC site, which is roughly a 1.86-mile radius. Although the UAO uses a three-mile radius, this discrepancy appears not to be an issue.

Cyprus Amax complied with the UAO. Final Removal Response Action Report at 2 (Mintech, Inc., Oct. 1995) ("Final Report"). Cyprus Amax began the removal action on March 1, 1994, and continued removal activities until August 7, 1995, at which time a remedial action was formally adopted in a consent agreement and final order signed by the State of Oklahoma, the City of Bartlesville, and Cyprus Amax. During the removal action, 389 residences [*30] underwent soil removal and restoration at an approximate cost of \$ 7.5 million, exclusive of the Agency's oversight costs. Final Report at 6, 7 and Executive Summary. According to Cyprus Amax, 62,796 cubic yards of contaminated soil were removed. Final Report at 6.

The removal action progressed until it was subsumed in the remedial action for the Site. According to the record of decision (ROD), n23 the selected remedial action for the Site required soil remediation at industrial, commercial and residential properties throughout the Site. For residential and recreational lands, contaminated soils were to be cleaned up to 925 ppm for lead and 100 ppm for cadmium. Record of Decision for Operable Unit One of the National Zinc Site at 15 (Oklahoma Department of Environmental Quality, Dec. 13, 1994).

n23 A record of decision is the document formally selecting the remedial action to be taken at a site. 40 C.F.R. § 300.430(f)(1)(iii).

On October 23, 1995, Cyprus Amax filed a petition with the EPA for reimbursement of its [*31] costs of complying with the UAO, believing that it had completed the work required by the UAO. However, because Cyprus Amax had not in fact completed the work, the petition was dismissed by this Board on January 24, 1996, without prejudice to Cyprus Amax's ability to refile the petition once it had completed the work. After it completed the required action, n24 Cyprus Amax refiled its petition for reimbursement on March 18, 1996, seeking to recover \$ 6,274,929.95 it allegedly spent to comply with the UAO. It is this refiled petition that we currently address.

n24 The Region agrees that Cyprus Amax has completed the action required by the UAO. Response to Petition at 15.

Cyprus Amax's petition raises several arguments to support the claim for reimbursement. First, Cyprus Amax contends that it is not liable for cleaning up the Site. Acknowledging that a federal district court has ruled against it on this issue, Cyprus Amax nevertheless makes the argument here to preserve its right to pursue reimbursement on this basis [*32] in the event the federal district court ruling is overturned on appeal. Second, Cyprus Amax contends that portions of the removal action selected by the Region were "arbitrary and capricious." In particular, Cyprus Amax asserts that the UAO was not based upon an "imminent and substantial endangerment to the public health or welfare or the environment" as required by CERCLA section 106(a). Further, Cyprus Amax argues that the Region's selection of 500 ppm and 30 ppm cleanup levels for lead and cadmium, respectively, was arbitrary and capricious, especially in light of the cleanup levels selected for the remedial action for the Site. Lastly, Cyprus Amax contends that the Region arbitrarily and capriciously required that all of the soil at a residence be removed if any single sample exceeded either the 1500 ppm lead or 90 ppm cadmium action levels, rather than requiring only the "hot spots" of contamination to be removed. The Region has filed a response addressing each of these contentions. We have examined each of Cyprus Amax's claims, and for the reasons that follow, conclude that they lack merit.

II. ANALYSIS

Where there is an imminent and substantial endangerment to the [*33] public health or welfare, or to the environment, from a release or threatened release of a hazardous substance from a facility, the Agency may, under CERCLA section 106(a), 42 U.S.C. § 9606(a), n25 unilaterally order potentially liable parties to abate the release or threatened release. n26 Those who comply with such administrative orders may petition the Agency for reimbursement of their costs in that effort, according to CERCLA section 106(b)(2)(A), 42 U.S.C. § 9606(b)(2)(A). That section provides in pertinent part:

Any person who receives and complies with the terms of any order issued under subsection (a) of this section may, within 60 days after completion of the required action, petition the [Agency] for reimbursement from the Fund for the reasonable costs of such action, plus interest. n27

To obtain reimbursement, a petitioner:

Shall establish by a preponderance of the evidence that it is not liable for response costs under section [107(a)] and that costs for which it seeks reimbursement are reasonable in light of the action required by the relevant order.

CERCLA § 106(b)(2)(C), [*34] 42 U.S.C. § 9606(b)(2)(C). In addition, a petitioner who is liable, and therefore is not entitled to reimbursement under the provision quoted above, may nevertheless recover costs it expended to the extent that:

It can demonstrate, on the administrative record, that the [Agency's] decision in selecting the response action ordered was arbitrary and capricious or was otherwise not in accordance with law.

CERCLA § 106(b)(2)(D), 42 U.S.C. § 9606(b)(2)(D). n28 Under either statutory basis for reimbursement, the petitioner bears the burden of proving its claim. *In re A&W Smelters and Refiners, Inc.*, CERCLA § 106(b) Petition Nos. 94-14 and 94-15, slip op. at 15-16 (EAB, Mar. 11, 1996), 6 E.A.D. , *aff'd*, *A&W Smelters and Refiners, Inc. v. Clinton*, 962 F. Supp. 1232 (N.D. Cal. 1997).

n25 That statute provides, in pertinent part:

When the President determines that there may be an imminent and substantial endangerment to the public health or welfare or the environment because of an actual or threatened release of a hazardous substance from a facility, he * * * may also * * * take other action under this section including, but not limited to, issuing such orders as may be necessary to protect public health and welfare and the environment.

[*35]

n26 Although the statute gives the President the authority to issue such orders, the President has delegated this authority to certain agencies, including the EPA. *See* Executive Order No. 12580 (Jan. 23, 1987); 52 Fed. Reg. 2923 (Jan. 29, 1987).

n27 The Agency has interpreted this statutory provision as setting forth prerequisites that must be satisfied before the merits of a petition will be considered. *See A&W Smelters and Refiners*, slip op. at 16. Here, we are satisfied that Cyprus Amax has met the prerequisites. The Region submits that Cyprus Amax has not met the prerequisite to incur "reasonable" costs because the Region disputes the reasonableness of the costs incurred by Cyprus Amax. Response to Petition at 15. We have interpreted CERCLA section 106(b)(2)(A) as requiring initially only that a petitioner incur costs, the reasonableness of which can be determined only after a finding that reimbursement is warranted. *A&W Smelters and Refiners*, slip op. at 17. Because the Region does not argue that Cyprus Amax did not incur costs, the prerequisites have been met.

n28 The "administrative record" for the purposes of this provision is the one developed pursuant to CERCLA section 113(k)(1), 42 U.S.C. § 9613(k)(1), which provides that the Agency "shall establish an administrative record upon which the [Agency] shall base the selection of a response action." An administrative record developed under this provision may be supplemented in accordance with established tenets of administrative law. See *In re T H Agriculture & Nutrition Company, Inc.*, CERCLA § 106(b) Petition No. 94-20, slip op. at 28 (EAB, Sept. 5, 1996), 6 E.A.D.

[*36]

A. Liability

CERCLA section 107(a), 42 U.S.C. § 9607(a), establishes four broad classes of parties liable for response actions under CERCLA. One such class consists of any person, including a corporation, n29 who at the time of disposal owned or operated the facility at which a hazardous substance was disposed. CERCLA § 107(a)(2). Another class, generally referred to as "generators," includes "any person who by contract, agreement, or otherwise arranged for disposal or treatment, or arranged with a transporter for transport for disposal or treatment, of hazardous substances owned or possessed by such person." CERCLA § 107(a)(3). The Region issued the UAO to Cyprus Amax based on its conclusion that Cyprus Amax "was an operator and a generator at the Site during the timeframe when disposal of hazardous substances * * * occurred at the Site." UAO at 10.

n29 For the purposes of CERCLA, "the term 'person' means an individual, firm, corporation, association, partnership, consortium, joint venture, commercial entity, United States Government, State, municipality, commission, political subdivision of a State, or any interstate body." CERCLA § 101(21), 42 U.S.C. § 9601(21).

[*37]

Before initiating this reimbursement action, Cyprus Amax was actively engaged in defending itself in a federal court action brought by other parties potentially responsible for cleaning up contamination resulting from smelting operations at the NZC facility. In that action, the other parties sued Cyprus Amax pursuant to CERCLA section 113(f), 42 U.S.C. § 9613(f), seeking to have Cyprus Amax contribute to the cost of the cleanup on the ground that Cyprus Amax was liable for such contamination. n30 On November 20, 1995, a federal district court held, in an interlocutory order, that Cyprus Amax was a generator of the hazardous substances that contaminated the NZC facility and the surrounding areas. n31 *Horsehead Industries, Inc., d/b/a Zinc Corporation of America v. St. Joe Minerals Corp., et al.*, No. 94-C-98-B, slip op. at 13-14 (N.D. Okla., Nov. 20, 1995). In particular, the court found that Cyprus Amax was the corporate successor to American Metal Company, Limited, the parent company of Bartlesville Zinc Company and Lanyon-Starr Smelting Company, both of which conducted smelting operations at the NZC facility. *Id.* at 3. The federal district [*38] court entered a final judgment adverse to Cyprus Amax in this matter on May 31, 1996, after Cyprus Amax had filed its petition for review.

n30 The federal court litigation was an action against Cyprus Amax by other private parties to recover costs spent to clean up the NZC facility itself. Cyprus Amax filed a counterclaim to recover money it spent cleaning up the Site involved here, that is, the area outside the NZC facility. The court considered the NZC facility and the surrounding areas as one "facility" for the purposes of determining liability.

n31 The court also found that Cyprus Amax was liable as an operator of the facility where the hazardous substances were disposed (the NZC facility).

In its petition for reimbursement, Cyprus Amax averred that it is entitled to reimbursement on the ground that it is not liable for the cleanup. In particular, Cyprus Amax stated its intent to appeal the adverse federal court interlocutory decision as soon as the decision became final, and explained that it asserted its [*39] non-liability in this proceeding merely "to preserve its right to reimbursement in the event that the Court's finding of liability is overturned on appeal." n32 Petition for Reimbursement at 8-9. According to Cyprus Amax, a "final decision on appeal in that case will necessarily resolve the question of Cyprus' status as a responsible party under CERCLA." *Id.* at 9. Further, Cyprus Amax

represents that it "understood that the issue of its alleged liability would not be relitigated before the Board." Memorandum in Support of Motion to Supplement Petition or, in the Alternative, for Further Briefing at 3.

n32 We note that Cyprus Amax's assertion that it is not liable is not supported by any legal and/or factual arguments in the petition for reimbursement. However, in reply to the Region's response to the petition for reimbursement, Cyprus Amax obtained leave from this Board to supplement its petition with copies of its briefs from the federal court litigation. Thus, Cyprus Amax's petition, as supplemented, contains the same argument concerning liability that Cyprus Amax made in federal court.

[*40]

In response, the Region argues that the federal district court's final decision as to Cyprus Amax's liability is entitled to res judicata effect in these proceedings, and that in light of that decision, Cyprus Amax is collaterally estopped from arguing its non-liability here. n33

n33 As noted above, the federal court litigation was a suit for contribution among private parties (Cyprus Amax and others potentially responsible for contamination at the smelter and the surrounding areas), and hence the EPA was not a party to that action. Because of the disparity between the parties involved in the federal court action for contribution under CERCLA section 113 and the parties involved in this reimbursement proceeding under CERCLA section 106(b), res judicata would not apply here. Under certain circumstances, collateral estoppel may apply even where the party asserting collateral estoppel was not a party to the previous litigation. See *LeBlanc-Sternberger v. Fletcher*, 67 F.3d 412, 433 (2d Cir. 1995) (In which the court (citing *Parklane Hosiery Co. v. Shore*, 439 U.S. 322 (1979)) stated that "in federal court, the applicability of collateral estoppel is not limited to cases where there is a complete identity of parties."). Cyprus Amax does not argue against its application, and indeed, as explained in the text, apparently concedes that the outcome of the federal court litigation is dispositive of its claim respecting liability here.

[*41]

We interpret the statements made by Cyprus Amax in its pleadings before this Board as reflecting its view that a final decision in the federal litigation would be dispositive on the issue of its liability for the purposes of the petition for reimbursement. It is clear to us that Cyprus Amax asserted its non-liability here merely to preserve its right to pursue reimbursement on the ground that it is not liable in the event the federal district court decision was reversed on appeal. Because Cyprus Amax never intended to relitigate its liability in these proceedings, we need not determine whether Cyprus Amax would have been collaterally estopped from doing so had it intended to.

As previously noted, after Cyprus Amax filed its petition for reimbursement, the federal district court entered a judgment in the matter of *Horsehead Industries, Inc., d/b/a Zinc Corporation of America v. St. Joe Minerals Corporation, et al.*, on May 31, 1996, thus making the interlocutory order holding Cyprus Amax liable under CERCLA section 107(a) ripe for appeal. Cyprus Amax has neither averred nor demonstrated that it appealed the judgment of the federal district court, and to the best of our knowledge, [*42] no appeal has been filed, making the federal district court's judgment final. Accordingly, the final decision in the federal litigation on Cyprus Amax's liability, which Cyprus Amax concedes is dispositive here, is that Cyprus Amax is a generator of the hazardous substances (lead and cadmium) found on the Site, and an operator of the facility at a time that the hazardous substances were disposed of at that facility. n34

n34 In its comments on the Preliminary Decision, Cyprus Amax states that "it does not contest the portion of the Preliminary Decision denying Cyprus' Section 106(b)(2)(c) claim." Cyprus Amax Comments on the Preliminary Decision at 2 n.1.

For all of these reasons, Cyprus Amax has failed to demonstrate that it is entitled to reimbursement on the grounds that it is not liable under CERCLA section 107(a).

B. Response Selection

1. Imminent and Substantial Endangerment

"The Agency's authority to issue a clean-up order under CERCLA § 106(a) is limited to those situations where there has [*43] been a determination that 'there may be an imminent and substantial endangerment to the public health or welfare or the environment because of an actual or threatened release of a hazardous substance from a facility.'" *A&W Smelters and Refiners, Inc.*, slip op. at 27. This Board interprets an argument that there was no "imminent and substantial endangerment" underlying a UAO as an argument that no response action should have been selected. *Cf. id.* at 28. Hence, such claims will be evaluated under CERCLA section 106(b)(2)(D), which, in our view, "is broad enough to allow an argument that the Agency acted arbitrarily or capriciously in selecting a remedy where no remedy selection was authorized because the statutory prerequisites to the issuance of an order did not exist." *Id.* Claims made under CERCLA section 106(b)(2)(D), by the terms of that statute, must be resolved on the administrative record established under CERCLA section 113(k), 42 U.S.C. § 9613(k), and 40 C.F.R. § 300.800 *et seq.*, to support the ordered response action. n35 Now, we turn to the merits of Cyprus Amax's claim.

n35 See n. 28 *supra*.

[*44]

Cyprus Amax contends that the UAO issued to it by the Region was not based on a showing of an imminent and substantial endangerment to the public health or welfare or the environment as required by CERCLA. Cyprus Amax makes two main arguments in this vein. First, Cyprus Amax argues that "prior to the issuance of the UAO, EPA already had removed any possible 'imminent and substantial endangerment' by first conducting soil removal at 'high access' areas and then by actually removing soil from yards of children with elevated blood levels." Petition for Reimbursement at 11. In addition, Cyprus Amax claims that "there were no children in the Bartlesville area with elevated blood lead [levels] believed to be caused by lead in soil." *Id.* Second, Cyprus Amax contends that instead of issuing a long-term UAO addressing the 1200 residences, the Region should have ordered all of this work to be performed under the remedial process, which process ultimately required Cyprus Amax to complete the removal action ordered by the UAO, but at different (and less stringent) cleanup levels for lead and cadmium.

In response to Cyprus Amax's first argument, the Region states that as memorialized in [*45] the September 1993 Action Memorandum, it demonstrated that an imminent and substantial endangerment to public health or welfare or the environment justified the UAO ordering soil removal at 1200 residences with elevated levels of lead or cadmium in the soil. The Region argues that the lead or cadmium in the soils at these residences posed an imminent and substantial endangerment different than the endangerment addressed by the soil removals at the "high-access" areas and the homes of children with elevated blood lead levels. In particular, the Region asserts that the elevated levels of lead and cadmium in the soil at these 1200 residences constituted an imminent and substantial endangerment "by creating a situation where contaminated soil could be incidentally ingested or inhaled by children." Response to Petition at 31.

With respect to Cyprus Amax's second argument, the Region notes that Cyprus Amax has not challenged the Region's characterization of this as a "time critical" removal, n36 and hence cannot now claim that the removal action could have been delayed until the final remedy was selected. Further, the Region argues that none of the documents from the remedy selection process [*46] upon which Cyprus Amax relies are included in the administrative record for this UAO, and that therefore those documents cannot be used to determine whether the Region acted arbitrarily or capriciously in selecting a response.

n36 A "time critical" removal is one for which on-site work must commence within six months from the selection of the removal action. In contrast, a "non-time critical" removal is one for which a planning period of at least six months exists before on-site activities must be initiated. See *In re Asarco Incorporated and Federated Metals Corporation*, CERCLA § 106(b) Petition No. 94-22, slip op. at 15 n.23 (EAB, Apr. 17, 1996), 6 E.A.D.

In its comments on the Preliminary Decision, Cyprus Amax contends that it "necessarily challenged the time-critical designation" through its argument that the removal action was not required in light of the imminent remedial action. Cyprus Amax Comments on Preliminary Decision at 4-5 n.5. Even if we were to conclude that Cyprus Amax was intending to challenge, albeit obliquely, the time-critical designation, we find ample support for the Region's decision to proceed with a removal action even though a remedial action was contemplated at some future time, given the risks involved in delaying soil cleanup. As set forth in the text, we reject Cyprus

Amax's contention that it was arbitrary and capricious for the Region not to delay cleanup pending institution of a remedial action.

[*47]

The "imminent and substantial endangerment" requirement was discussed by this Board in *In re The Sherwin Williams Company*, CERCLA § 106(b) Petition No. 94-7, slip op. at 14-15 (footnote omitted) (EAB, Oct. 12, 1995), 6 E.A.D. , where we said:

While the phrase "imminent and substantial endangerment" is not specifically defined in CERCLA, the phrase has been scrutinized by the courts. "Endangerment means a threatened or potential harm and does not require proof of actual harm." *United States v. Ottati & Goss, Inc.*, 630 F. Supp. 1361, 1394 (D. N.H. 1985). The "endangerment" need not be an emergency, nor does it have to be immediate to be "imminent." *United States v. Conservation Chemical Co.*, 619 F. Supp. 162, 193 (D.C. Mo. 1985). Given the importance of any threat to public health and the reality that implementing a corrective plan might take years, "imminence" must be considered in light of the time that might be needed to sufficiently protect the public health. *See B.F. Goodrich Co. v. Murtha*, 697 F. Supp. 89, 96 (D. Conn. 1988). Thus, an "endangerment" is "imminent" "if factors [*48] giving rise to it are present even though the harm may not be realized for years." *Conservation Chemical Co.*, 619 F. Supp. at 194.

Furthermore, the word "substantial" does not require quantification of the endangerment; "an endangerment is 'substantial' if there is reasonable cause for concern that someone or something may be exposed to a risk of harm by a release or a threatened release of a hazardous substance if a remedial action is not taken." *Id.*

After reviewing the administrative record in this case, we conclude that Cyprus Amax has not met its burden of proving that there was no imminent and substantial endangerment underlying the UAO at issue here.

The administrative record clearly reveals the following. Cadmium has been identified as a probable carcinogen, and lead is a highly toxic metal. Children are more sensitive to lead exposure than adults. When present in soil, cadmium and lead can either be inhaled or ingested, particularly by young children who frequently engage in hand-to-mouth conduct. The Region identified 1200 residences within a three-kilometer radius of the NZC facility containing lead contamination greater than 1500 [*49] ppm and/or cadmium contamination greater than 90 ppm, or, in other words, lead and/or cadmium contamination more than three times greater than the cleanup levels for those elements established to protect human health. Further, blood testing showed a correlation between distance from the smelter and blood lead levels greater than 10 [mu] g/dl in children under the age of six. *See* September 1993 Action Memorandum at 7. Based upon the evidence that both soil contamination and blood contamination increased with proximity to the NZC facility, the Region concluded that "it appears that there is a very strong correlation between the locations of elevated surface soil lead concentrations and the locations of the residences of children with elevated blood lead levels." September 1993 Action Memorandum at 8.

Given the risks posed by lead or cadmium contamination, the undisputed fact that approximately 1200 residences contained soil contaminated with lead in excess of 1500 ppm or cadmium in excess of 90 ppm, and the apparent correlation between high blood lead levels and high levels of soil contamination, it is clear to us that the UAO issued to Cyprus Amax was based upon an imminent and [*50] substantial endangerment. Under the standard set forth above, the "endangerment," or the threatened or potential harm, is the risk that people, and especially young children, will be exposed to and contaminated by lead or cadmium through inhalation or ingestion of contaminated soil. The endangerment was "imminent" as the factors giving rise to it were present, that is, the soil was contaminated, a fact not in dispute. The endangerment was "substantial" as the facts in this case reasonably present cause to be concerned that people, and in particular young children, could be exposed to a risk of harm from the contaminated soil if a response action was not ordered.

Cyprus Amax argues that there was no imminent and substantial endangerment because there was no evidence of children in the Bartlesville area with elevated blood lead levels believed to be caused by lead in the soil. To support its claim, Cyprus Amax relies upon a document entitled "Bartlesville Lead Project, Blood Lead Studies," attached as Exhibit 9 to the petition for reimbursement. Exhibit 9, which is not in the administrative record, summarizes the results of

the blood lead testing among children in Bartlesville. However, [*51] Exhibit 9 tends to support rather than rebut the Region's conclusion that there is a correlation between high levels of lead soil contamination and high levels of lead in children's blood. The blood testing summarized in Exhibit 9, and in the September 1993 Action Memorandum, showed that all of the children who tested with blood lead levels greater than 10 [mu] g/dl lived within three kilometers of the NZC facility, the same area with lead soil contamination more than three times greater than the cleanup levels established to protect human health. n37

n37 CERCLA section 106(b)(2)(D) requires that our determination of whether the Region acted arbitrarily or capriciously in selecting a response action be made *on the administrative record*. Exhibit 9 is not in the administrative record for this UAO, and ordinarily could not be considered by us in determining whether the Region acted arbitrarily and capriciously in selecting a response action. See *T H Agriculture & Nutrition*, CERCLA § 106(b) Petition No. 94-20, slip op. at 43-44 (EAB, Sept. 5, 1996), 6 E.A.D. . However, we will consider the data in Exhibit 9 since they are summarized in the September 1993 Action Memorandum, which is in the administrative record.

[*52]

Cyprus Amax also argues that there was no imminent and substantial endangerment because at the time the UAO issued, the Region had already eliminated any imminent and substantial endangerment by conducting soil removal at the high-access areas and the yards of children with elevated blood lead levels. This argument is also unpersuasive. As explained above, in order to issue a UAO, the Region must determine that an actual or threatened release of a hazardous substance presents an imminent and substantial endangerment to public health. What is relevant here, then, is whether circumstances as they existed when the UAO was issued presented an imminent and substantial endangerment; whether more compelling circumstances were previously present and addressed is not legally relevant. We have already determined that even after the Region's efforts in removing the contaminated soil from the high-access areas and the yards of children with elevated blood lead levels, the circumstances present when this UAO was issued demonstrated an imminent and substantial endangerment to human health, and Cyprus Amax has not met its burden of proving otherwise.

Cyprus Amax also argues that the Region should [*53] have ordered the soil removal to be completed through the remedial, instead of removal, process. Cyprus Amax states that the remedial process was under way, and indeed a remedial investigation/feasibility study (RI/FS) n38 was in the early stages at the time the Region issued the UAO. Petition for Reimbursement at 11. Cyprus Amax argues that:

However, EPA did not wait for issuance of the Record of Decision ("ROD") based on the RI/FS but instead issued the UAO in February 1994. Given the fact that EPA was aware of higher cleanup levels of both cadmium and lead approved by EPA at other sites and that EPA knew how dependent the lead cleanup level was to site-specific conditions, its insistence on issuing the long-term UAO before the RI/FS was completed and the ROD was issued was arbitrary and capricious.

Petition for Reimbursement at 12. n39 In its comments on the Preliminary Decision, Cyprus Amax articulates a similar argument, contending that the Region arbitrarily did not evaluate the risks posed solely by delaying the soil cleanup by one construction season, until after the RI/FS was complete. Cyprus Amax Comments on Preliminary Decision at 5.

n38 A remedial investigation is the "process * * * to determine the nature and extent of the problem presented by the release." A feasibility study is "undertaken * * * to develop and evaluate options for remedial action." 40 C.F.R. § 300.5.

[*54]

n39 As evidence that the Region acted arbitrarily and capriciously in issuing the UAO prior to the selection of a remedy, Cyprus Amax relies upon a document, attached to its petition for reimbursement as Exhibit 14, that Cyprus Amax claims shows EPA approved higher cleanup standards for lead and cadmium at other sites undergoing remedial action. Exhibit 14 is an unsigned, undated two-page list of arsenic and cadmium cleanup goals,

apparently reflecting remedial action cleanup levels for cadmium contained in various RODs for sites across the country. This document, however, is not in the administrative record. As noted above, we are statutorily limited to the consideration of documents in the administrative record when determining whether the Region acted arbitrarily or capriciously, and therefore Exhibit 14 is not relevant to our analysis.

Cyprus Amax's argument is unpersuasive. CERCLA gives the Agency "broad authority * * * to fulfill the statute's * * * goal of obtaining *timely* clean-ups of environmental threats." *A & W Smelters and Refiners, Inc.*, slip op. at 34 (emphasis added). In this [*55] case, the Region exercised this broad authority by deciding to conduct the residential soil cleanup as a removal action, rather than as a remedial action, which would have taken longer to implement. n40 In this way, the residential soil cleanup began on March 1, 1994, approximately one and one-half years before the remedy for cleaning up residential soils was adopted on August 7, 1995. Indeed, the Region deliberately chose to begin the residential soil cleanup as a removal action expecting that the cleanup would ultimately be subsumed in the remedy adopted by the remedial process. September 1993 Action Memorandum at 9, 10. Contrary to Cyprus Amax's comments on the Preliminary Decision, the Region did evaluate the risks presented by delaying soil cleanup until the remedy was selected, and decided that in light of those risks it would begin addressing soil contamination immediately, through a removal action, rather than delaying such work until the then-unknown date upon which remedial action would commence. While the Region anticipated that remedial activity would begin in the 1995 construction season, at the time the removal was selected there was no certainty as to the timing of [*56] the anticipated remedial activity. n41 Further, when it selected the removal action, the Region was not certain that the anticipated remedial action would address the urgency of the human health threat as did the removal action, and therefore, when selecting the removal action, the Region made clear that despite the anticipated remedial action, additional removal activity may be necessary. See September 1993 Action Memorandum at 13 ("If a human health and environmental endangerment remains after signing of the ROD, EPA may address the endangerment under either removal or remedial authority depending on the urgency of the situation."). n42

n40 "Generally, the selection of a remedy takes longer than the selection of a removal, and involves more Agency deliberation and public participation." *T H Agriculture & Nutrition*, slip op. at 6.

n41 See September 1993 Action Memorandum at 2 ("Region 6 will endeavor to propose the final remedy in approximately one year. The Record of Decision (ROD) will be finalized, and remedial action will begin pending sufficient funding.").

n42 As the Region points out in its response to Cyprus Amax's comments on the Preliminary Decision, Cyprus Amax's argument that only a remedial action was called for ignores the relationship between removal and remedial actions. See 53 Fed. Reg. 51,394, 51,405 (Dec. 21, 1988) ("There will always be some overlaps between the two programs, and it is important that they work closely together. The goal is to ensure that the most significant threats are addressed in the most efficient and effective manner."). Cyprus Amax's argument appears to be premised upon the faulty assumption that removals and remedies are mutually exclusive.

[*57]

"The arbitrary and capricious standard is not based upon hindsight." *T H Agriculture & Nutrition Company, Inc.*, CERCLA § 106(b) Petition No. 94-20, slip op. at 41 (EAB, Sept. 5, 1996), 6 E.A.D. . At the time the Region issued the UAO, circumstances presented an imminent and substantial endangerment, and the Region chose to act promptly rather than maintain the status quo pending the selection of a remedy. Because the Region did not have the benefit of a completed remedy selection process, it used the information it had available at that time, and selected a response. See *T H Agriculture & Nutrition*, slip op. at 42. Under the arbitrary and capricious standard, "the critical determination is *not* whether the Region selected the best possible response, or whether another response would also have been an acceptable selection; it is merely whether the Region acted arbitrarily in making its selection." *Id.* at 32. Cyprus Amax has not pointed to any evidence in the administrative record showing that the Region acted arbitrarily in choosing the path it took (proceeding with a removal action) rather than the one advocated by Cyprus Amax (waiting for a remedial action). [*58] Rather, the administrative record amply supports the Region's determination to issue a UAO requiring the removal action.

2. Cleanup Standards

Cyprus Amax contends that the Region acted arbitrarily and capriciously in requiring that the residential soils be cleaned to levels of 500 ppm for lead and 30 ppm for cadmium. n43 We conclude that Cyprus Amax has failed to meet its burden of proving that the Region acted arbitrarily in selecting the soil cleanup levels.

n43 The Region argues that because the UAO is not in the administrative record, it cannot be reviewed by the Board under CERCLA section 106(b), Response to Petition for Reimbursement at 49, and cannot serve as a basis for a reimbursement claim. *Id.* at 47. We need not decide this issue. Cyprus Amax has asked this Board to consider whether the Region's selection of a removal action (which includes the cleanup levels) was arbitrary and capricious. The selection of the removal action, in this case, occurred in the September 1993 Action Memorandum, which clearly is part of the administrative record.

[*59]

With respect to the 500 ppm cleanup level for lead, Cyprus Amax makes the following two statements:

EPA Guidance dated August 29, 1991, states that the "best available approach is to use [the] EPA Uptake Biokinetic (UBK) Model as a risk assessment tool to predict blood lead levels and aid the risk management decision on soil lead cleanup levels at CERCLA/RCRA sites which are characterized as residential." The fact that the lead cleanup level for residential soils for this particular site was nearly doubled to 925 ppm in the ROD indicates the imprecision of EPA's initial cleanup level.

Petition for Reimbursement at 12.

The 500 ppm cleanup level for lead was selected based upon the Agency's guidance available in 1993. September 1993 Action Memorandum at 3. At that time, there were two relevant guidance documents. The first, OSWER Directive # 9355.4-02, entitled "Interim Guidance on Establishing Soil Lead Cleanup Levels at Superfund Sites," was issued in 1989 and provided "an interim soil cleanup level for total lead, at 500 to 1000 ppm, which [EPA] consider[s] protective for direct contact at residential settings." The second guidance document was an update to the 1989 [*60] document, and was issued on August 29, 1991 ("Update"). The Update reiterated the recommendation that cleanup levels for lead-contaminated residential soil be in the range of 500 to 1000 ppm. The Update also explained that the Agency had developed a computer model, known as the UBK model, as a tool for site-specific risk assessments for lead in soil. Although the Update did not explicitly recommend the use of the UBK model at that time, it did describe the UBK model as the best available approach to aid the determination of cleanup levels for lead-contaminated soil. "The UBK model predicts blood lead levels for children * * * based on the site-specific information (if available) about the various lead-containing media (such as air, dust, soil and water) to which [the children] are likely to be exposed." *In re Asarco Incorporated and Federated Metals Corporation*, CERCLA § 106(b) Petition No. 94-22, slip op. at 28 (EAB, Apr. 17, 1996), 6 E.A.D. . If no site-specific information is available, the UBK model prescribes "default values" for the various lead-containing media. In using the UBK model, the Agency "recommend[s] a model projection benchmark of either 95% of the sensitive [*61] population having blood lead levels below 10 [mu] g/dl, or a 95% probability of an individual having a blood lead level below 10 [mu] g/dl." Update at 3. n44 "When the model is run using this benchmark, as well as each of the model's default parameters (i.e., no site specific data is input), an acceptable soil level of approximately 500 ppm is predicted of lead." *Id.*

n44 Thus, the threshold level of concern for purposes of the UBK model is 10 [mu] g/dl, *see Asarco Incorporated*, slip op. at 28, the same level of concern used by the Region and the State of Oklahoma in this case.

The Region avers, and Cyprus Amax does not contend otherwise, that there was no site-specific data available in this case for input into the UBK model. In these circumstances, Agency guidance, including the Update, provides that if the UBK model were used, it would produce a recommended cleanup level of 500 ppm, consistent with the Agency's policy of using lead cleanup levels between 500 ppm and 1000 ppm for residential soil. Thus, based [*62] upon this

Agency guidance for selecting a soil cleanup level, the Region selected a 500 ppm cleanup level for lead-contaminated residential soil at the Site.

It is therefore difficult to perceive precisely what argument Cyprus Amax is making when it challenges the cleanup level for lead on the basis that Agency guidance states that the UBK model is the best available tool for aiding in the establishment of soil lead cleanup levels. Cyprus Amax has not made any claim that with respect to the Region's reliance upon the Update, the Region should have acted in any other way. Indeed, as explained above, given the lack of site-specific input to use in the UBK model, the Update suggests a cleanup level of approximately 500 ppm.

In its comments on the Preliminary Decision, Cyprus Amax contends that the administrative record fails to provide a sufficient explanation as to why the Region selected 500 ppm for the lead cleanup standard, and in particular, why the Region selected the lowest level in the 500 - 1000 ppm range suggested by Agency guidance. We find this argument unpersuasive for several reasons. First, the argument is made for the first time in Cyprus Amax's comments. n45 Second, [*63] as detailed above, the Region first considered the then-current Agency guidance, which, as explained above, recommended a cleanup level in the range of 500 to 1000 ppm. The Region then considered the Agency guidance indicating that if the UBK model were used without site-specific data, it would produce a cleanup level of 500 ppm. n46 In addition, the Region considered the apparent strong correlation between the locations of elevated surface soil lead concentrations and the locations of children with elevated blood lead levels in deciding to choose the low end of the range recommended in Agency guidance. Particularly in light of the apparent correlation described above, the Region's selection of 500 ppm was not unreasonable. In our view, Region's decision-making path "may reasonably be discerned," see *Dickson v. Secretary of Defense*, 68 F.3d 1396, 1404 (D.C. Cir. 1995).

n45 The 1996 Guidance indicates that in the absence of extraordinary circumstances, the Board will * * * decline to consider any new claims or new issues sought to be raised during the comment period." 1996 Guidance at 9.

[*64]

n46 Cyprus Amax correctly notes that the Agency guidance indicated some "concerns" about the use of the UBK model in default situations, that is, in situations where no site specific data are available. However, it is clear to us that what the UBK model would have recommended, had it been used in this case, was only one factor in the Region's selection of a cleanup level. The Region also relied upon the apparent correlation between elevated soil lead concentrations and locations of children with elevated blood lead levels, and the Agency guidance recommending cleanup levels in the range of 500 to 1000 ppm. Based upon the totality of these circumstances, we cannot say the Region acted arbitrarily.

Cyprus Amax's petition raises the concern that "the fact that the lead cleanup level for residential soils for this particular site was nearly doubled to 925 ppm in the [record of decision] indicates the imprecision of EPA's initial cleanup level." Petition for Reimbursement at 12. We interpret this as an argument that the cleanup level for lead-contaminated soil ultimately adopted through the remedial [*65] process (925 mg/kg) demonstrates the arbitrariness of the Region's selection of a cleanup level for lead-contaminated soil in the removal process (500 ppm). We find this argument unpersuasive. The document from the remedial process upon which Cyprus Amax relies (the Record of Decision) is not in the administrative record for this UAO, not being in existence at the time of issuance of the UAO. Further, as we have previously explained, "the arbitrary and capricious standard is not based upon hindsight." *T H Agriculture & Nutrition*, slip op. at 41. Instead, we examine the Region's selection of a response action at the time it made that selection. At the time the Region selected the 500 ppm cleanup level, it did not have the benefit of a completed remedial investigation and feasibility study identifying long-term cleanup standards. Rather, the Region utilized the information it had available at the time it selected a cleanup level, and based upon that information made a selection that Cyprus Amax has not demonstrated to be arbitrary or capricious. See *id.* at 42.

With respect to the 30 ppm cleanup level selected by the Region for cadmium-contaminated soil, Cyprus Amax again points [*66] to the cleanup level adopted by the remedial process as evidence that the Region acted arbitrarily. In particular, Cyprus Amax notes that the remedial process produced a cleanup level of 100 mg/kg for cadmium-contaminated soil. In contrast, the removal action subject to Cyprus Amax's complaint requires soil with concentrations of cadmium in excess of 90 ppm to be cleaned up to a standard of 30 ppm.

The Region selected the cadmium cleanup level for the removal action based upon a health consultation with the ATSDR. September 1993 Action Memorandum at 3. Indeed, on May 12, 1992, ATSDR reviewed the Region's proposed 30 ppm cleanup level, and concluded that "the proposed [cleanup] level of 30 ppm total cadmium for residential areas in Bartlesville is considered adequately protective of public health." ATSDR Record of Activity (May 12, 1992). Cyprus Amax's argument that the remedial cleanup level ultimately adopted for cadmium demonstrates that the Region acted arbitrarily in selecting a 30 ppm cleanup level for the removal action is unpersuasive for the same reasons set forth above with respect to the lead cleanup level. The document from the remedial process upon which Cyprus Amax relies [*67] (the Record of Decision) is not in the administrative record for this UAO. Further, the Region did not have the benefit of a completed remedial investigative process at the time it selected the cadmium cleanup level for the removal. When the removal cleanup level for cadmium was selected, the Region had before it the ATSDR health consultation, and Cyprus Amax has failed to demonstrate that the Region acted arbitrarily in relying thereupon.

Cyprus Amax also contends that the selection of a 30 ppm cadmium cleanup level was arbitrary because "EPA had approved at least five other sites with higher cleanup levels than 30 ppm." Petition for Reimbursement at 13. To support this claim, Cyprus Amax again refers to the document attached to Cyprus Amax's petition as Exhibit 14. Because Exhibit 14 is not in the administrative record, Cyprus Amax cannot rely upon this document to prove its claim. *TH Agriculture & Nutrition*, slip op. at 43-44. In any event, Exhibit 14 is inconclusive, at best, with respect to recommending an appropriate cadmium cleanup level for Bartlesville residential soil. Exhibit 14 is merely a list of CERCLA sites with their corresponding cadmium remedial (not removal)/ [*68] cleanup levels; other than these two pieces of information, no site-specific information is provided. Thus, there is nothing in the document to demonstrate why the five sites with cadmium cleanup levels greater than 30 ppm are so like the Bartlesville site that the latter should also have a cadmium cleanup level greater than 30 ppm. Further, Exhibit 14 also indicates thirteen sites where cadmium cleanup levels were more stringent than the 30 ppm level at issue here. Thus, an at least equally plausible assertion can be made that Exhibit 14 could have argued for a *more* stringent standard.

Lastly, Cyprus Amax argues that the 30 ppm cleanup level for cadmium is arbitrary and capricious in light of "EPA's own Risk Assessment Guidance for Superfund [which] indicate[s] that a risk-based cleanup level for cadmium was 140 ppm (based on a Hazard Index of 1)." Petition for Reimbursement at 13. According to the Region, the Risk Assessment Guidance is not relevant here because:

Under EPA's Risk Assessment Guidance, a cleanup level of 140 ppm may be appropriate *if* the risk is based solely on toxicity and not carcinogenic risk, *and if* the cleanup is intended for a person who is [*69] exposed for six years as a child and then 24 years as an adult (the risk assessment formula is based on body weight). * * * However, the September 9, 1993 action memorandum, on which the UAO is based, is intended to produce a removal action which will protect children, * * * and to address carcinogenic (not just toxic) risk. * * * Therefore, the information regarding the 140 ppm cleanup level is irrelevant in any event.

Response to Petition at 52 (citations omitted). Cyprus Amax, which bears the burden of proof here, has failed to persuade us that the Risk Assessment Guidance demonstrates that the cleanup level for cadmium was selected arbitrarily in this case.

Cyprus Amax, in its comments on the Preliminary Decision, argues that the Region arbitrarily and capriciously selected the lead and cadmium cleanup levels because those levels were selected in 1992, and the Region did not "revisit" those levels in 1993, when the September 1993 Action Memorandum was signed, and in 1994 when the UAO was issued. Cyprus Amax Comments on Preliminary Decision at 8. We are not persuaded by this argument, which is made for the first time in the comments on the Preliminary Decision. The Region [*70] clearly had the opportunity to modify the cleanup levels when it proposed the removal action for approval in the September 1993 Action Memorandum, and it obviously chose not to. Cyprus Amax, which has the burden of proof in these proceedings, has not pointed to any evidence in the administrative record suggesting that circumstances so changed between 1992 and 1993 (or, for that matter, between 1992 and 1994) such that the Region acted arbitrarily in making that choice.

For all of these reasons, Cyprus Amax's argument that the Region acted arbitrarily in establishing the cadmium cleanup level of 30 ppm is without merit.

3. Hot Spots

Cyprus Amax argues that "the removal action requirement that an entire residence have all its soil removed if any single sample exceeded either the 1500 ppm lead or 90 ppm cadmium action levels, rather than only remove the 'hot spot,' was also arbitrary and capricious." Petition for Reimbursement at 13. Cyprus Amax contends that the Region should have required composite sampling before requiring the removal of all soil from a residence. To support this claim, Cyprus Amax refers to the remedial design report for the Site, and the "Baseline Human [*71] Health Risk Assessment" prepared in 1995 for the California Gulch Superfund Site, both of which utilized composite sampling. *Id.* at 13-14. Again, we find Cyprus Amax's arguments unpersuasive.

The Region explained that its decision to require the removal of the soil from an entire yard based on one sample testing above the 1500 ppm lead and/or 90 ppm cadmium action levels rested upon the Region's "judgment that if a sample in a yard exceeded the action level, then the rest of the yard probably exceed[ed] the action level." Response to Petition at 42. Given that the soil contamination in Bartlesville resulted from air disposition from uncontrolled stack emissions at the smelter(s), and given the widespread contamination within three kilometers of the NZC facility, as evidenced by the Phase III Report, the Region contends that its judgment was reasoned. *Id.*

Cyprus Amax has not pointed to any evidence in the administrative record, nor provided any argument, as to why the Region's reasoning is arbitrary or capricious. The risk assessment prepared in 1995 for a California Superfund site is not in the administrative record, and therefore cannot be considered when determining whether [*72] the Region arbitrarily selected a response action. *T H Agriculture & Nutrition*, slip op. at 43-44. n47

n47 In any event, Cyprus Amax does not show why this report, prepared by a contractor in 1995 and dealing with both a different site and a different hazardous substance (arsenic), should compel us to conclude that the Region acted arbitrarily in selecting a response action in 1993.

Nor can the remedial design report relied upon by Cyprus Amax be used to demonstrate that the Region acted arbitrarily in requiring the removal of all of the soil from a yard where one sample demonstrated lead or cadmium concentrations in excess of the action levels, for at the time the Region selected the removal action, the remedial design report was not yet available, and as such could not be included in the administrative record on which the Region based its decision.

In its comments on the Preliminary Decision, Cyprus Amax argues that:

Rather than ordering "whole yard" removal action, which it knew would never be completed [*73] at the 1200 residences, the only reasonable course of action for EPA to take was to require "hot spot" removal, thereby maximizing the number of residences and the amount of cleanup of more highly contaminated soil that would be addressed during this interim period[.]

Cyprus Amax Comments on Preliminary Decision at 9. This argument, however, does not demonstrate that the Region acted arbitrarily or capriciously. n48 Instead, it merely amounts to the unpersuasive argument that the Region could have and should have ordered a different response. As we have previously stated herein, under the arbitrary and capricious standard, "the critical determination is *not* whether the Region selected the best possible response, or whether another response would also have been an acceptable selection; it is merely whether the Region acted arbitrarily in making its selection." *T H Agriculture & Nutrition*, slip op. at 32. Because Cyprus Amax does not point to any evidence in the administrative record showing that the Region acted arbitrarily in ordering whole yard soil removal as opposed to "hot spot" soil removal, Cyprus Amax's claim lacks merit.

n48 As the Region points out, Cyprus Amax's argument is premised on the assumption that the remedy selected for this site would necessarily supersede the removal. Region's Comments on Preliminary Decision at 18-19. For the reasons set forth in the text above, this premise is faulty. *See* Section II.B.1, *supra*.

[*74]

III. CONCLUSION

For the reasons detailed above, it is the Board's final decision that the claim for reimbursement in CERCLA Petition No. 96-2 must be denied in all respects.

So ordered.

Legal Topics:

For related research and practice materials, see the following legal topics:

Administrative LawJudicial ReviewAdministrative RecordGeneral OverviewEnvironmental LawHazardous Wastes & Toxic SubstancesCERCLA & SuperfundEnforcementCost Recovery ActionsPotentially Responsible PartiesSuccessorsEnvironmental LawHazardous Wastes & Toxic SubstancesCERCLA & SuperfundRecordkeeping & Reporting

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in writing, or (ii) the date of the expenditure concerned." 42 U.S.C. § 9607(a).

38. [HN20] The statute "clearly requires a written demand for specified response costs". *Bancamerica Commercial Corp. v. Trinity Industries*, 900 F. Supp. 1427 (D. Kan. 1995). Courts are split, however, on what form the demand must take. Several district courts have held that such written demand must include a specific dollar amount. *State of Colorado v. United States*, 867 F. Supp. 948, 950 (D. Colo. 1994). See also *United States v. Hardage*, 750 F. Supp. 1460, 1505 (W.D. Okla. 1990), *aff'd in part, rev'd in part*, 982 F.2d 1436 (10th Cir. 1992).

39. The Fifth Circuit Court of Appeals holds, however, that the Complaint constitutes a sufficient written demand for payment, even if the Complaint does not specify an exact amount, as is the case here. In the *Matter of Bell Petroleum Services, Inc.*, 3 F.3d 889 (5th Cir. 1993). [*60] See also *American Color & Chemical Co. v. Tenneco Polymers, Inc.* 918 F. Supp. 945, 1995 WL 813221 (D. S.C.) (applying *Bell Petroleum Services*).

40. Because there is no evidence in the record indicating that a written demand for payment was made by Plaintiffs to Cyprus, the Court holds that the filing of the Complaint constitutes such demand, as per *Bell Petroleum Services*. Therefore, as to costs incurred before the Complaint was filed, prejudgment interest, as calculated per the formula in 42 U.S.C. § 9607(a)(4), should be assessed from the date the Complaint was filed. With respect to costs, if any, incurred after the Complaint was filed, prejudgment interest should be assessed from the date of the expenditures. Cyprus also is entitled to pre-

judgment interest as to off-site Operable Unit One expenditures post-August 1995.

41. Plaintiffs (Salomon, St. Joe and ZCA) are to be granted judgment against Cyprus for 30 percent of the total sum reflected in Finding of Fact No. 99, which is \$ 10,134,354 (30 percent equals \$ 3,040,306), plus prejudgment interest thereon; and Defendant Cyprus is to be granted judgment against Plaintiffs on its counterclaim [*61] for 70 percent of the approximate sum of \$ 700,000 (yet to be determined) plus prejudgment interest thereon.

42. The parties are hereby ordered to submit an agreed Judgment in keeping with these Findings of Fact and Conclusions of Law, including the rate and amount of prejudgment interest allowable to Plaintiffs and to Cyprus, within 20 days of the date of this Order. Failing in such, a hearing thereon will be held on May 1ST, 1996, at 1:30 a.m. and each party is to submit proposed Findings of Fact and Conclusions of Law (not to exceed five pages) on the prejudgment interest issue and a proposed judgment in accordance with these Findings of Fact and Conclusions of Law ¹² within three days in advance of the hearing.

12 Such proposed judgment also should include the exact total, as reflected in the record, of the funds expended by Cyprus on Operable Unit One after Salomon stopped participating in the remediation with Cyprus in August 1995.

IT IS SO ORDERED, this 2nd day of April, 1996.

THOMAS R. BRETT

UNITED [*62] STATES DISTRICT JUDGE